

# Idaho

## Agricultural Pollution Abatement Plan

*... a guidance document addressing nonpoint source water quality pollution*

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*Sponsored by:*

Idaho Soil Conservation Commission  
Idaho Department of Environmental Quality

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# **Idaho Agricultural Pollution Abatement Plan**

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## **EXECUTIVE SUMMARY**

The original Agricultural Pollution Abatement Plan (Ag Plan) was certified in 1979 by Governor John Evans. The Ag Plan was Idaho's response to Section 208 of the federal Clean Water Act (PL 92-500) and represented the agricultural portion of the State Water Quality Management Plan. The previous Ag Plan versions detailed how agricultural nonpoint source pollution was to be managed. The Plan was revised in 1983 and again in 1991 (published in 1993).

This version of the Ag Plan builds on the foundation laid specifically by the Idaho Nonpoint Source Management Plan (DEQ 1999) which sets goals and provides guidance for the management of all nonpoint source related activities throughout the state. The Ag Plan is the implementing action plan for all nonpoint source agricultural sector activities in the state.

This latest revision of the Ag Plan was undertaken with the guidance of a Technical Advisory Committee consisting of ten members representing state and federal agencies with water quality responsibilities. An Agricultural Water Quality Advisory Committee consisting of eight members representing conservation, industry and commodity groups reviewed and provided input to this revision.

The Ag Plan is structured to include nine main sections.

### **Section A: GOAL AND STRATEGY**

Section A outlines the Ag Plan's purpose, goal and implementation strategy.

### **Section B: AUTHORITIES, ROLES AND RESPONSIBILITIES**

Numerous units of state and federal governments' authorities, roles and responsibilities relating to the control and management of nonpoint source pollution originating from agricultural activities, of surface and ground waters of Idaho are defined in Section B.

### **Section C: AGRICULTURAL NONPOINT SOURCE WATER QUALITY PRIORITIES**

Section C discusses both surface and ground water quality priorities throughout the state and the programs in place to address those priorities.

### **Section D: AGRICULTURAL ACTIVITIES WHICH MAY IMPACT WATER QUALITY**

Section D describes current agricultural activities and associated potential pollutants which may cause water quality impacts.

### **Section E: WATER QUALITY LAW**

Section E provides a background and overview of current Idaho water quality law. The section reviews the elements of applicable statutes and discusses agency authorities relating to carrying out water quality protection.

## Section F: BEST MANAGEMENT PRACTICES

Best management practices (BMPs) for the control of nonpoint sources of pollutants from agricultural activities are listed in Section F. This section contains the Catalog of Component Practices and reviews BMP development, selection and evaluation.

## Section G: IMPLEMENTATION

Section G outlines and describes the implementation strategy which includes six action items necessary to reach the goal of restoring and maintaining surface and ground water quality.

## Section H: MONITORING AND EVALUATION

An important part of the Ag Plan is the evaluation of applied BMPs. Section H reviews the feedback loop process—the mechanism for agricultural nonpoint source management based on the implementation and evaluation of BMPs.

## Section I: PLAN DEVELOPMENT

Section I discusses the development of this plan and lists the Technical Advisory Committee and Water Quality Advisory Committee members.

The Ag Plan is intended to be a dynamic guidance document, with periodic updates provided as needed. Water quality laws, policies and programs are constantly changing to meet resource and society needs. The Ag Plan will be reviewed and amended as necessary to ensure consistency and compatibility with state water quality programs and plans, state and federal legislation and local needs. The Idaho Soil Conservation Commission will be responsible for initiating and coordinating this review. When substantial revision is warranted, the Agricultural Water Quality Advisory Committee and Technical Advisory Committee will be convened to provide guidance.

# Idaho Agricultural Pollution Abatement Plan

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Section A:

GOAL AND STRATEGY

## **GOAL and STRATEGY**

### **Purpose**

The Idaho Agricultural Pollution Abatement Plan (Ag Plan) is a guidance document that describes the state's process for the control and abatement of agricultural nonpoint source pollution as it relates to water quality.

### **Goal**

The goal of the Ag Plan is to:

*Contribute toward full support of identified beneficial uses through enhancement and maintenance of the quality of surface and ground waters of Idaho, to the extent that they are impacted by agricultural nonpoint source pollutants.*

The goal is based on implementing federal and state water quality laws. Implementation of these laws occurs through adoption of state water quality rules, standards, state policy statements, agreements, and development of specific programs.

### **Mechanism**

The Ag Plan's mechanism to control nonpoint source pollution is the feedback loop process.<sup>1</sup> The feedback loop describes a process of nonpoint source pollution management based on the implementation and effectiveness evaluation of best management practices (BMPs). The process provides a mechanism to direct BMP implementation adjustments and follow-up monitoring requirements. It is imperative that results of agricultural nonpoint source pollution abatement are evaluated, communicated and made available for review so program adjustments and recommendations can continue to be implemented.

### **Implementation Strategy**

The Ag Plan's goal is achieved through an implementation strategy containing six action items. The implementation strategy and development is discussed in detail in Section G: Implementation.

Action Item 1: Identify waters and/or watersheds in which beneficial uses are threatened or impaired by agricultural activities.

Action Item 2: Prioritize waters and/or watersheds to determine level of implementation efforts needed.

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<sup>1</sup> The feedback loop process is discussed in Section H and referenced in federal and state water quality laws: Section 319 Nonpoint Source Management Program, and the Idaho Water Quality Standards and Wastewater Treatment Requirements.

- Action Item 3: Identify specific watershed management strategies for implementation.
- Action Item 4: Define authorities, regulations and commitments to ensure that implementation will take place.
- Action Item 5: Implement the feedback loop process.

**Feedback Loop**

- Step 1. Review current designated beneficial use status of identified water resources.
- Step 2. Develop best management practices (BMPs) based on the comparison between existing water quality to water quality criteria.
- Step 3. Implement BMPs on-site and evaluate for technical adequacy of design and installation.
- Step 4. Determine if established criteria are achieved and if the BMPs are adequate as designed, installed and maintained. Modify BMPs if necessary and reevaluate.
- Action Item 6: Communicate evaluation results, conclusions, and recommendations from the process of assessing agricultural BMP effectiveness in achieving water quality goals.

# Idaho Agricultural Pollution Abatement Plan

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Section B:

AUTHORITIES, ROLES AND RESPONSIBILITIES



## **AUTHORITIES, ROLES AND RESPONSIBILITIES**

### **Introduction**

Numerous units of state and federal government have authorities, roles and responsibilities that play a part in the control and management of nonpoint source pollution, originating from agricultural activities, of surface and ground waters of Idaho. The Idaho Soil Conservation Commission (SCC) is the state agency organized to provide guidance and program implementation for private and state agricultural land use activities.

This section outlines the authorities, roles and responsibilities of the SCC, and the state and federal agencies that participate in the control and management of nonpoint source pollution. Those state and federal agencies include:

#### State Agencies

- Idaho Soil Conservation Commission
- Idaho Department of Environmental Quality
- Soil Conservation Districts
- Idaho State Department of Agriculture
- University of Idaho - Cooperative Extension System
- Idaho Department of Water Resources
- Idaho Water Resource Board
- Idaho Department of Fish and Game
- Idaho Department of Lands
- Office of Species Conservation

#### Federal Agencies<sup>1</sup>

- USDA Natural Resources Conservation Service
- USDA Farm Service Agency
- USDA Agricultural Research Service
- US Environmental Protection Agency
- USDA Forest Service
- USDI Bureau of Land Management
- USDI Bureau of Reclamation
- USDI Fish and Wildlife Service
- USDC National Marine Fisheries Service

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<sup>1</sup>     USDA: United States Department of Agriculture  
      USDI: United States Department of Interior  
      USDC: United States Department of Commerce

## **Idaho Soil Conservation Commission (SCC)**

### Background and Authorities:

The SCC was created by the Idaho Legislature in 1939. The SCC has the authority to organize Soil Conservation Districts (SCDs) and to provide assistance and guidance to the supervisors of SCDs in order to enhance their capabilities in carrying out effective local conservation programs (Idaho Code, Title 22, Chapter 27). Under Idaho Code Title 39, Chapter 36, the SCC is named the designated agency for grazing activities and for agricultural activities. The SCC is composed of five members appointed by the Governor for five year terms and administers the 51 state SCDs throughout Idaho. The SCC operates through the local SCDs and does not have regulatory authority or licensing authority over water quality or pollution control.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Implement the Idaho Agricultural Pollution Abatement Plan (Ag Plan) at the state level for private and state agricultural lands. Coordinate periodic review and update of the Ag Plan, in consultation with the advisory committees, and chair the Ag Plan BMP Technical Committee.
2. Provide technical assistance to owners and operators of private lands for the planning, implementation and evaluation of agricultural best management practices.
3. Offer assistance to SCDs in carrying out their powers and programs.
4. Inform SCD supervisors of actions and priorities of other SCDs to facilitate a sharing of information and to promote cooperation.
5. Review SCD workload inventories and analyses and recommend financing and legislation needed to apply needed programs and practices, including those affecting water quality.
6. Organize and support local SCDs in addressing state and local natural resource concerns. Assist SCDs in bringing together public outreach activities and technical and financial resources to meet these goals.
7. Administer, jointly with the Idaho State Department of Agriculture (ISDA), the Agricultural Water Quality Cost-Share Program for Idaho.
8. Administer the Resource Conservation and Rangeland Development Program for grants and loans, the Grazing Land Conservation Initiative grants, and the Natural Resource Conservation Credit program.
9. Lead the Idaho OnePlan effort as the primary computer-based conservation planning process for all natural resource concerns.
10. Develop the agricultural component of comprehensive total maximum daily load (TMDL) watershed implementation plans in consultation with SCDs and watershed advisory groups.
11. Provide technical and administrative assistance to SCDs and watershed advisory groups for TMDL planning and implementation.

12. Coordinate subbasin-wide fish and wildlife habitat protection and enhancement through the Clearwater Focus Program and Upper Salmon Basin Watershed Project.
13. Provide support and technical assistance to the National Cooperative Soil Survey.

### **Idaho Department of Environmental Quality (DEQ)**

#### Background and Authorities:

The Environmental Protection and Health Act (EPHA), Idaho Code §39-101 to §39-130, gives authority to DEQ regarding the protection of public health and the environment, including planning, permitting and certification authorities. The EPHA provides authority for DEQ to administer a system to safeguard the quality of the waters of the state, including but not limited to the enforcement of standards relating to the discharge of effluent into the waters of the state and the storage, handling and transportation of solids, liquids and gases which may cause or contribute to water pollution. Under the authority of the EPHA, DEQ has promulgated state water quality standards, develops water quality plans to attain these standards, and makes determinations regarding 401 certifications for point source pollution.

The Idaho Water Quality Act (Act), Idaho Code §39-3601 *et seq.*, provides for the state determination of designated uses and when those uses are impaired. The Act includes an anti-degradation provision. The Act requires the state to determine beneficial uses and the status of those uses and prepare and provide reports to the US Environmental Protection Agency (EPA). The Act provides for the development of TMDLs on impaired waters, and a priority ranking for the development of TMDLs, regarding waterbodies that do not fully support beneficial uses. The Act establishes basin advisory groups and watershed advisory groups to advise DEQ regarding water quality issues.

The Ground Water Quality Rule IDAPA 58.01.11 gives the Board of Environmental Quality the authority to promulgate the Ground Water Quality Rule pursuant to Sections 39-105, 39-107, 39-120, and 39-126, Idaho Code. The authority to formulate and adopt rules as are necessary and feasible to protect the environment and the health of the citizens of the state is vested in the Director and Board pursuant to §39-105 and §39-107, Idaho Code. Under §39-120, Idaho Code, the Board is authorized to adopt, by rule, ambient ground water quality standards. Under §39-126, Idaho Code, all state agencies shall incorporate the Ground Water Quality Plan, adopted by the legislature, in the administration of their programs and are granted authority to promulgate rules to protect ground water quality as necessary to administer such programs. Under the Idaho Water Quality Standards and Wastewater Treatment Requirements IDAPA 58.01.02, pursuant to §39-105 and §39-3601 *et seq.*, Idaho Code, the Director is authorized to identify beneficial uses, establish standards, and identify a feedback loop process as the control strategy for nonpoint source control.

Authority for DEQ's role in the control of agricultural pollution comes from Idaho Code and delegation under the federal Clean Water Act. The Idaho Environmental Protection

and Health Act (Idaho Code, Title 39, Chapter 1) provides authority to the DEQ Director to adopt rules and regulations and take enforcement actions to implement the policy of the state in protecting the public health and environment.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Assist in the setting of attainable goals for water quality improvement and protection of beneficial uses through the Ag Plan.
2. Periodically review progress of the Ag Plan in meeting water quality goals and make recommendations for corrective strategy.
3. Periodically evaluate applied BMPs developed via the Ag Plan for efficacy in meeting water quality goals.
4. Develop monitoring programs to evaluate effectiveness of the Ag Plan.
5. Jointly with the SCC and the advisory committees, periodically review and update the Ag Plan.
6. Work with state and federal agencies, user and interest groups to implement the Ag Plan.
7. Provide continuity with EPA to assure the Ag Plan meets the goals and procedural requirements of the federal Clean Water Act.
8. Work cooperatively with federal, state and local entities to implement the Idaho Ground Water Quality Plan (1996).
9. Utilize the Policy for Addressing Degraded Ground Water Quality Areas (Policy No. PM00-4) for identifying, prioritizing, planning and implementing management strategies.
10. Coordinate integration of the Ag Plan with the Agricultural Chemical Ground Water Protection Program for Idaho (1996) and the Idaho State Pesticide Management Plan for Ground Water Protection (2001).

### **Soil Conservation Districts (SCDs)**

#### Background and Authorities:

The Soil Conservation District Law, Idaho Code, Title 22, Chapter 27, establishes the organization and purposes of SCDs. The 51 SCDs are governmental subdivisions of the state and include private, state and federal land, with the exception of some incorporated cities and portions of the Idaho National Engineering Environmental Laboratory. The Soil Conservation District Law provides the SCDs with broad-based natural resource responsibilities.

SCDs contribute financial support to the Idaho Association of Soil Conservation Districts (IASCD), a private, legislatively approved, non-profit corporation. IASCD assists the SCDs by coordinating programs with public agencies and organizations to achieve common goals; encourages coordination between agricultural commodity and conservation programs to achieve long-term conservation goals; and sponsors and

conducts many programs which provide information and educational opportunities concerning natural resource concerns and issues to SCDs and citizens of Idaho.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Implement the Ag Plan at the local level for private and state agricultural lands.
2. Provide assistance to landowners and land users for the conservation, management and treatment of natural resources within SCD boundaries.
3. Coordinate public outreach activities and bring together technical and financial resources in addressing local and state natural resource concerns.
4. Develop comprehensive natural resource management plans to protect and enhance the quality of soil, water, air, plants and animal resources.
5. Assist land owners in implementing comprehensive natural resource management plans through integration of cooperating state and federal agency programs.
6. Conduct surveys, investigations and research relating to the character of natural resources, for conservation, development and utilization.
7. Conduct local demonstration projects.
8. Through local sponsorship of outreach and incentive programs, provide education, planning, technical assistance and financial incentives to promote the application of BMPs.
9. Develop Five Year Resource Conservation Programs establishing and recognizing agricultural nonpoint source water quality priorities.
10. Review local needs, and develop and/or modify and adopt, component practices to be used to develop BMPs to meet state water quality standards and to protect beneficial uses.

### **Idaho State Department of Agriculture (ISDA)**

#### Background and Authorities:

ISDA is responsible for the regulation of pesticides, pesticide registrations, pesticide certification and training, pesticide enforcement, waste pesticide disposal and container recycling programs, urban pesticide programs, pesticide endangered species reviews and the pesticides and water quality programs. ISDA is also responsible for registration of fertilizers, soil and plant amendments. Authority for ISDA's role for control of nonpoint and point source pollution related to agriculture, including dairy and feedlot facilities, comes from a variety of laws, rules, plans, programs, memorandums of understanding, and cooperative agreements with EPA.

ISDA is recognized as a lead state water quality agency working to implement laws and rules, water quality management and planning, engineering and technical services, monitoring, permits, and education and licensing efforts related to agriculture. Related to ground water quality protection, ISDA implements the Agricultural Ground Water Quality Protection Program for Idaho (1996). Through authority of this program, ISDA chairs the Agricultural Ground Water Coordination Committee, which reviews and

evaluates potential agricultural point and nonpoint source impacts and coordinates in the development and implementation of prevention and response strategies. ISDA coordinates with DEQ and Idaho Department of Water Resources (IDWR) in administering the Idaho Ground Water Quality Plan under provision of the Ground Water Quality Protection Act of 1989.

The pesticides and water quality program includes the creation and implementation of the Idaho State Pesticide Management Plan for Ground Water Protection, monitoring of ground water for pesticides, education of applicators, identification of potential pesticide ground water BMPs and regulation of specific active ingredients. The control of dairy cattle animal waste is regulated by ISDA as the result of the Idaho Dairy Pollution Prevention Initiative, which is implemented through law and rules, and a Memorandum of Understanding between ISDA, DEQ, EPA, and the Idaho Dairymen's Association. The control of beef cattle animal waste is regulated by ISDA as the result of the Idaho Beef Cattle Environmental Control Program, implemented through law and rules, and a Memorandum of Understanding between ISDA, DEQ, EPA, the Idaho Cattle Association, and the Idaho Cattle Feeding Operations Interagency Cooperative Agreement between ISDA and DEQ.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Regulate certification and licensing of pesticide applicators and chemigators.
2. Regulate the registration and sale of pesticides.
3. Regulate, monitor and inspect chemigation systems.
4. Collect pesticide sales records from dealers.
5. Collect restricted use pesticide sales reports from applicators under the United States Department of Agriculture Record Keeping Law.
6. Implement the EPA Pesticides Cooperative Agreement including a water quality and pesticide component.
7. Implement the State Pesticide Management Plan (PMP) for Idaho to address the EPA Pesticides in Ground Water Strategy (1991), and the EPA Draft PMP Rule (1997).
8. Implement the Agricultural Ground Water Quality Protection Program for Idaho (1996) and the Agricultural Ground Water Coordination Committee.
9. Participate in the development and evaluation of BMPs for pesticide and fertilizer use.
10. Implement the Agricultural Ground Water Monitoring Program relative to nutrients, pesticides, and animal waste.
11. Implement the Agricultural TMDL Monitoring and Evaluation Program to evaluate and assess surface waters related to agricultural TMDL impacts and BMP evaluations; this program assists the SCC and SCDs in implementing the EPA TMDL program and Idaho water quality law.
12. Cooperate with industry, federal, and state agencies to develop plans to address nutrient run-off and water quality impacts of dairies, beef confined feeding operations, and livestock grazing.

13. Implement the Concentrated Animal Feeding Operation (CAFO) siting team.
14. Implement Dairy and CAFO nutrient management planning and implementation.
15. Work cooperatively with federal, state and local entities to implement the Idaho Ground Water Quality Plan (1996).
16. Participate with DEQ and IDWR in the Ground Water Coordination Agreement Meeting Group (1996).
17. Participate in the Ground Water Monitoring Technical Committee.

### **University of Idaho – Cooperative Extension System (CES)**

#### Background and Authorities:

Established under the Smith-Lever Act of 1914, CES was designated as the education arm of the USDA. In 1989 the USDA Water Quality Program designated CES as having the key role in water quality education and a lesser role in providing technical assistance.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Disseminate research findings to landowners, cooperating agencies and the general public.
2. Assist agricultural producers with recommendations for application of fertilizers and pesticides based on research and field trials.
3. Assist with calibration of pesticide and fertilizer application equipment.

### **Idaho Department of Water Resources (IDWR)**

#### Background and Authorities:

IDWR has statutory responsibility for administering the appropriation and allotment of surface and ground water resources of the state and to protect the ground water resources against waste and contamination.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Administer the Underground Injection Control (UIC) for the State of Idaho.
2. Insure that all deep injection wells are under state permit and condition permits to protect the ground waters of the state from pollution.
3. Insure that all active deep injection wells are in compliance with permit conditions.
4. Insure that non-compliant deep injection wells are brought into compliance or properly decommissioned.
5. Perform periodic reviews of injection wells in Idaho and maintain a current UIC data base.

6. Supervise the construction and decommissioning of injection wells to prevent pollution of ground waters by injection well activities.
7. Provide public information on UIC activities.
8. Administer the licensing of well drillers operating in the State of Idaho.
9. Collect, review, and assimilate Driller's Reports on wells drilled in Idaho.
10. Permit and regulate the proper construction and abandonment of water wells, monitor wells, injection wells, geothermal or other wells or holes which may provide a source of waste or contamination of the ground water.
11. Assist the public and well drillers with geological and technical information that will result in the proper construction of wells and the efficient development of the state's ground water resource.
12. Supervise construction or abandonment of wells which are complicated and/or are located in controversial areas.
13. Administer and enforce the Idaho Stream Channel Protection Act.
14. Consult with other interested state and federal agencies, to determine the effects a proposed alteration is likely to have on a stream.
15. Insure compliance with all permits issued to construct in a stream channel.
16. Provide the Army Corps of Engineers (Corps) with the official state position letter on each activity being considered by the Corps for permitting.
17. Seek mitigation, penalties and injunctive relief for all violations to the Stream Channel Protection Act.
18. Work cooperatively with federal, state and local entities to implement the Idaho Ground Water Quality Plan (1996).

### **Idaho Water Resource Board (IWRB)**

#### Background and Authorities:

The IWRB was formed in 1965 under Article 15, Chapter 17 of the Constitution of the State of Idaho to, among other responsibilities, formulate and implement a state water plan for optimum development of the water resources in the public interest. The IWRB is the constitutional water agency within IDWR. IDWR provides staff for the IWRB, and the activities of the two entities are highly collaborative and closely coordinated. However, IWRB duties are defined through constitutional and statutory authorities (Title 42, Chapter 17 Idaho Code) and separate from IDWR.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Develop and implement a statewide water policy plan for conservation, development, management and optimum use of all unappropriated water resources and waterways of the state in the public interest (Comprehensive State Water Plan Part A).
2. Prepare detailed water management plans for each Idaho river basin, ground water aquifer, or other geographic consideration as components of the Comprehensive State Water Plan Part B. This includes designation of selected waterways as state



- protected rivers.
3. Provide financial assistance for water development and conservation projects.
  4. Appropriate water for minimum stream flows or other uses beneficial to the public.
  5. Administer the water supply bank to make use of and obtain the highest duty for beneficial use from water and to provide a source of adequate water supplies to benefit new and supplemental water uses.

### **Idaho Department of Fish and Game (IDFG)**

#### Background and Authorities:

Authority for the agency's role comes from Idaho Code, which gives IDFG responsibility to manage fish and wildlife populations. The Department has minimal legal authority over water quality.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Monitor fish and wildlife species to assess the status of populations.
2. Assess the potential impacts of land and water management and development on the habitats of fish and wildlife species and populations.
3. Enter into cooperative agreements with universities, state and federal agencies, and other entities to promote wildlife research and to train students for fish and wildlife management careers.
4. Acquire, manage, and administer lands for the purposes of public access for fishing, hunting, and trapping, and to protect important fish and wildlife habitats.
5. Enter into cooperative agreements with state and federal agencies, local government entities, corporations, landowners, associations, or individuals to develop, manage, and protect fish and wildlife habitats.
6. Provide technical assistance, expertise, and support on fish and wildlife matters.

### **Idaho Department of Lands (IDL)**

#### Background and Authorities:

Under Executive Order 88-23 (the Antidegradation Policy), IDL is designated as the lead agency to address surface mining, dredge and placer mining, and forestry practices on all lands within the state. With respect to agricultural activities, IDL leases state endowment land to generate revenue from grazing and agriculture.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Manage approximately 2.5 million acres of state endowment lands for maximum income consistent with sound long term resource management practices and in accordance with existing water quality laws.
2. On state forest lands, apply BMPs which will provide for beneficial uses of water.
3. On private lands, implement the Forest Practices Rules and Regulations to protect water quality and to take enforcement action when needed to achieve this goal.
4. Provide other state and federal agencies the opportunity to review and comment on mine applications, BMP design and reclamation plans. Preoperational site reviews and subsequent site inspections are often conducted in coordination with other state and federal agencies.
5. Take regulatory responsibility for any encroachment on, in or above the beds or waters of any navigable lake or stream in Idaho (Title 58, Chapter 104 (9) and 142 *et seq.*, Idaho Code).

### **Idaho State Office of Species Conservation (OSC)**

#### Background and Authorities:

OSC was created by the Idaho State Legislature in 2000 (Idaho Code 67-818). Within the Office of the Governor, OSC provides coordination, cooperation and consultation among state, federal and private interests to preserve and restore species listed under the federal Endangered Species Act (ESA). OSC coordinates actions with germane state agencies to protect listed species with an overall goal of recovery of the species and removal from federal listing. OSC does not have regulatory authority or licensing authority over water quality or pollution control.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Coordinate ESA activities with various state, federal and private entities.
2. Coordinate ESA activities with water quality activities where they overlap.
3. Where ESA / water quality issues arise on agricultural land, work with the SCC and landowners to develop management plans for protection of the listed species as well as protection of the landowner's interests.
4. Coordinate Subbasin Planning in Idaho to holistically address fish & wildlife restoration throughout Idaho's watersheds.
5. Through Subbasin Planning, provide a mechanism for Idaho citizens to become involved in ESA / water quality issues.
6. Solicit, provide and delegate funding for ESA programs, including ESA water-related programs.

## **USDA Natural Resources Conservation Service (NRCS)**

### Background and Authorities:

The NRCS receives its direction and authority from the Soil Conservation and Domestic Allotment Act, Section 7 (Public Law 46-74; USCA 590(3)), the Agriculture and Consumer Protection Act, Title 10, and the Agricultural Credit Act, Title 4.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Provide technical assistance to units of government and private land users for the planning and implementation of water quality measures and initiatives.
2. Administer and provide technical assistance and/or financial support to USDA-NRCS programs such as PL-566 Small Watershed Program, Conservation Operations, Environmental Quality Incentives Program, Wetland Reserve Program, Farmland Protection Program, Soil and Water Conservation Assistance Program, Resource Conservation and Development, River Basin Planning, Soil Survey, Snow Survey, Emergency Watershed Protection, Forest Incentives Program, and the Plant Materials Program, each of which has a water quality component.
3. Maintain, periodically revise, and supplement the Field Office Technical Guide which serves as the major source of technical information for the state to consider in adopting agricultural BMPs.
4. Provide leadership in implementing USDA water quality initiatives.
5. Assist in developing tools to quantify environmental and economic effects of BMPs.
6. Support and encourage surface and ground water research and data collection, including monitoring.
7. Administer agricultural programs outlined in the adopted Farm Bill.

## **USDA Farm Service Agency (FSA)**

### Background and Authorities:

The Farm Service Agency (FSA) receives its authority and direction from the Food Security Act of 1985, as amended by the Farm Security and Rural Investment Act of 2002.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Administer annual and long term cost-share programs.

## **USDA Agricultural Research Service (ARS)**

### Background and Authorities:

The ARS is the principal in-house research agency of the USDA. ARS is one of the four component agencies of the Research, Education, and Economics mission area. Congress first authorized federally supported agricultural research in the Organic Act of 1862, which established what is now USDA. That statute directed the Commissioner of Agriculture “to acquire and preserve in his Department all information he can obtain by means of books and correspondence, and by practical and scientific experiments.”

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Plan, develop, and implement research that is designed to produce new knowledge and technologies required to assure the continuing vitality of the nation’s food and agricultural enterprise.
2. Conduct research on the cause and effect relationships between agricultural management practices and soil and water conservation.
3. Conduct water quality research at the Soil and Water Management Research Unit in Kimberly and at the Northwest Watershed Research Center in Boise.

## **US Environmental Protection Agency (EPA)**

### Background and Authorities:

In July of 1970, the White House and Congress worked together to establish the EPA in response to the growing public demand for cleaner water, air and land. Prior to the establishment of the EPA, the national government was not structured to make a coordinated effort to control pollutants which harm human health and degrade the environment.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Maintain oversight responsibilities for sections of the federal Clean Water Act.
2. Periodically review the management plans and their revisions developed under Sections 208 and 319 (Nonpoint Source Control) and determine if those plans should continue to be approved. EPA provides funding to the state for nonpoint source pollution control projects through the Section 319 program.
3. Jointly administer the Section 404 (Wetlands Protection) program with the Corps. EPA has enforcement authority over un-permitted discharges to wetlands.
4. Section 401 of the federal Clean Water Act prohibits the discharge of pollutants through a point source to surface waters of the United States except by the authority of a National Pollutant Discharge Elimination System (NPDES) permit. These permits establish technology based limits on the amount of pollutants that can be discharged. More stringent limitations are required if necessary to maintain

Idaho Water Quality Standards. Section 309 provides authority to enforce the requirements of the Clean Water Act. Because the State of Idaho has never sought delegated authority for this program, NPDES permits are issued in Idaho by the EPA.

5. Work cooperatively with federal, state and local entities to implement the Idaho Ground Water Quality Plan (1996).
6. Provide oversight and approval for the development of the Section 303(d) list of impaired waters with DEQ. Under Section 303(d) of the Clean Water Act, each listed waterbody must have a TMDL report completed which contains load allocations and wasteload allocations for each pollutant for which a waterbody has been listed. EPA provides oversight and approval to DEQ for the development of TMDLs. In addition, EPA develops TMDLs for impaired waterbodies within tribal reservation boundaries.
7. EPA is a signatory party to two memorandums of understandings that address water pollution from dairies and beef cattle operations. Signatory parties include ISDA, DEQ, the Idaho Cattle Association and the Idaho Dairymen's Association. These memorandums of understanding provide the ISDA with primary responsibilities for inspecting and bringing dairy and beef animal feeding operations into compliance. EPA reserves the right to inspect problem dairies and feedlots but has agreed to discontinue routine inspections. EPA and the other signatory parties participate in annual reviews of the dairy and beef cattle programs.

## **USDA Forest Service (USFS)**

### Background and Authorities:

USFS authority and responsibility for management is governed in part by the Organic Act; the Multiple Use, Sustained Yield Act; the Wilderness Act; the Forest and Rangeland Renewable Resources Act; the National Forest Management Act; the National Environmental Policy Act (NEPA); the Wild and Scenic Rivers Act and the Clean Water Act.

### Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Manage approximately 20.5 million acres of National Forest lands in Idaho.
2. Manage the range resource program on National Forest lands to control or avoid erosion sources, riparian and stream disturbances through the development and implementation of range NEPA decisions, Allotment Management Plans, Annual Operating Plans, and enforcement of permit terms and conditions.
3. Design and implement watershed improvement programs that restore impaired watershed processes and functions including riparian areas and waterbodies.
4. Incorporate fish habitat improvements to provide or restore quality fish habitats.
5. Conduct soil and water resource inventories, resource condition analyses and assessments.

6. Conduct forest research, such as the research project located at the Forestry Sciences Laboratory in Boise, to improve management of riparian grazing interactions.
7. Conduct water quality monitoring with emphasis on implementation and effectiveness monitoring of BMPs.
8. Implement the appropriate Ag Plan strategies and guidelines on federal National Forest lands where agricultural uses are employed.

### **USDI Bureau of Land Management (BLM)**

#### Background and Authorities:

The BLM receives its authority from the Taylor Grazing Act, the federal Clean Water Act, the Federal Land Policy and Management Act, the Public Rangelands Improvement Act, NEPA, the Emergency Wetlands Resource Act, the Agricultural Credit Act, the Land and Water Conservation Fund Act, and the Executive Orders for Floodplain Management and Protection of Wetlands.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Administer, manage and protect approximately 12 million acres of public lands in Idaho.
2. Regulate, license and enforce land use activities that affect nonpoint source pollution control on public lands.
3. Maintain, restore and improve riparian areas as healthy and productive plant communities.
4. Develop riparian management demonstration areas to evaluate various riparian management techniques.
5. Conduct water quality monitoring with emphasis on implementation and BMP effectiveness monitoring.
6. Implement the Ag Plan on federal agricultural lands administered by the BLM.

### **USDI Bureau of Reclamation (BOR)**

#### Background and Authorities:

The National Reclamation Act of 1902 authorized the Secretary of the Interior to develop irrigation and hydropower projects in 17 western states.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Manage and administer approximately 130,000 acres of public lands in Idaho.

2. Plan, construct, operate, and maintain federal irrigation projects, until such time the operation and maintenance of irrigation projects may be transferred to project beneficiaries.
3. Provide technical assistance in irrigation BMP evaluation.
4. Implement structural and nonstructural water management programs.
5. Design, finance and construct structural aspects of irrigation project operations.

### **US Fish and Wildlife Service (FWS)**

#### Background and Authorities:

Authority for the FWS comes from the Fish and Wildlife Coordination Act; the ESA; the Food Security Act as amended by the Food, Agriculture, Conservation and Trade Act; the Anadromous Fish Conservation Act; the National Wildlife Refuge System Act and the Executive Orders: 11990-Protection of Wetlands and 11988-Floodplain Management. It is the mission of the FWS to provide leadership toward achieving a national net gain of fish and wildlife and the natural systems which support them.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Provide assistance to government agencies, organizations and private landowners to protect, conserve, manage and restore wildlife and fish resources.
2. Provide for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife and plants depend.
3. Provide assistance to the USDA on matters relating to wetland identification, determination of exemptions to the wetland conservation provisions, issuance of implementing regulations, mitigation and restoration of values and functions on converted wetlands.
4. Conduct studies and make recommendations to EPA concerning measures for eliminating or reducing polluting substances detrimental to fish and wildlife in interstate or navigable waters, or their tributaries.
5. Establish National Wildlife Refuges to protect a) areas of high species diversity; b) critical, declining or vulnerable habitats; and c) corridors to link protected habitats.
6. Aid in the review of state water quality standards for BMPs, and the indemnification of areas where water quality adversely affects fish and wildlife or human use.

### **NOAA Fisheries National Marine Fisheries Service (NMFS)**

#### Background and Authorities:

NMFS is charged by Congress with the protection and enhancement of marine, estuarine, and anadromous species and their habitat. In Idaho the primary anadromous species of concern are salmon and steelhead. The primary laws that provide guidance and give NMFS authority in

matters relating to the control and management of nonpoint source pollution originating from agricultural activities are: the Fish and Wildlife Coordination Act, NEPA, the ESA, Magnuson-Stevens Fishery Conservation and Management Act, and the Executive Orders: 11990-Protection of Wetlands and 11988-Floodplain Management.

Roles and Responsibilities (related to the control and management of nonpoint source pollution originating from agricultural activities):

1. Provide management assistance to federal, tribal, state, local, and private organizations toward the protection and restoration of anadromous fish and the habitat upon which they depend.
2. Under the ESA, NMFS provides consultation to federal, state and private entities regarding the effects of an action on listed anadromous fish species. This authority specifically relates to nonpoint source pollution when these types of activities occur on federal land or are controlled by a federal permitting authority.
3. Provide grants to state, local, and private organizations to conserve and restore anadromous fish habitat.



# Idaho Agricultural Pollution Abatement Plan

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Section C:

AGRICULTURAL NONPOINT SOURCE  
WATER QUALITY PRIORITIES

## **AGRICULTURAL NONPOINT SOURCE WATER QUALITY PRIORITIES**

Stream segments, lakes, reservoirs, aquifers and wetlands within Idaho that do not fully support beneficial uses because of impacts from agricultural nonpoint source pollution are considered water quality priorities under this plan. This plan also promotes implementing agricultural best management practices (BMPs) in an effort to maintain and enhance waters within the state that fully support beneficial uses, and ensure aquatic habitat is protected.

Idaho Soil Conservation Districts (SCDs) assess and prioritize for action, stream segments, lakes, reservoirs, aquifers and wetlands within their district. These local priorities are based on both importance to the state and to the geographical area covered by the SCD. SCDs each develop and maintain a Five Year Resource Conservation Plan which sets forth and annually documents specific actions relative to these priorities. Through SCDs, statewide agricultural water quality priorities, both surface and ground water, are recognized at the local level for response. This response includes planning and outreach activities, technical and financial assistance for implementation of selected treatment alternatives, and support to Watershed Advisory Groups (WAGs).

### **Surface Water**

As required by §303(d) of the federal Clean Water Act (CWA), surface waters that do not fully support beneficial uses are placed on the state's list of water quality limited waterbodies. Idaho Code 39-3601 *et seq.* sets the current standard for regulatory action for surface waterbodies where beneficial uses are not fully supported. Under this statute, waterbodies that are listed as a "high" priority indicate that unless remedial actions are taken in the near term, there will be significant risk to designated or existing beneficial uses. "Medium" priority waterbodies are those which water quality data indicates that unless remedial action is taken, there will be risks to designated or existing beneficial uses. "Low" priority waterbodies are where limited or subjective water quality data indicates designated beneficial uses are not fully supported, but risks to human health, aquatic life, or the recreational, economic or aesthetic importance of a particular water body are minimal. This rating from high to low priority affects the Total Maximum Daily Load (TMDL) development schedule and impacts the technical evaluation scores of each proposed project. The higher the priority of the water body, the quicker a TMDL is scheduled for development, and the higher the technical evaluation score will be for the proposed project.<sup>1</sup>

The Idaho Nonpoint Source (NPS) Management Plan<sup>2</sup> is responsible for coordinating all nonpoint source activities within the state. The primary purposes of the Idaho NPS Management Plan are to provide comprehensive and consistent direction on priorities, and implementation guidance for addressing impaired or threatened water quality.

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<sup>1</sup> State of Idaho Guidance for Development of Total Maximum Daily Loads, June 8, 1999. Water Quality Programs/Surface Water Section Idaho Division of Environmental Quality. Overview for the Implementation of Nonpoint Source TMDLs, August 1999, Idaho Division of Environmental Quality.

<sup>2</sup> Idaho Nonpoint Source Management Plan, December 1999, G. Daily, C. Bidondo, T. Maguire, Water Quality Program, Division of Environmental Quality.

The State of Idaho uses a variety of legislative and programmatic approaches to protect its waters. Idaho's TMDL process and NPS Management Plan are linked through regulatory and non-regulatory components of the CWA, state water quality law and regulations. The TMDL process provides the necessary implementation targets to improve water quality on impaired waterbodies, while the NPS Management Plan acknowledges acceptable BMPs, and allows land owners and operators to selectively choose BMPs best suited to their individual economic, social, and water quality objectives.

Addressing these priorities, in general, is based on the State of Idaho's TMDL schedule. This schedule lists the waterbodies identified in the Environmental Protection Agency's 1994 §303(d) list, and the respective dates for TMDL completion. Waters which have been documented as meeting beneficial uses have been removed from subsequent §303(d) lists (i.e. years 1996, 1998), whereas waters shown to not fully support beneficial uses are included on the most current list as required under the CWA.<sup>3</sup>

Basin Advisory Groups review data from within the basin watersheds and make recommendations concerning monitoring, designated beneficial use status revisions, prioritizations of impaired waters, public input, and establishment of a priority listing of watersheds needing pollution management. In addition, the individual WAGs advise state designated agencies on the development and implementation of actions necessary to achieve full support of designated beneficial uses within a timely manner.

## **Ground Water**

The Idaho State Legislature passed the Ground Water Act (1989) and the Ground Water Quality Plan (1992) for overall guidance and protection of ground water. The lead agencies identified in the act and plan are Idaho Department of Environmental Quality (DEQ), Idaho Department of Water Resources (IDWR), and Idaho State Department of Agriculture (ISDA). The Agricultural Ground Water Quality Protection Program for Idaho (1996) established ISDA as the lead implementing agency through the Agricultural Ground Water Coordination Committee. ISDA is the lead agency in Idaho working to complete and implement the Idaho State Pesticide Management Plan for Ground Water Protection (2002) along with the supporting monitoring program.

The goal of the Agricultural Ground Water Quality Protection Program for Idaho (1996) is to protect the state's ground water and interconnected surface water from contamination originating from agricultural activities. The purpose of the program is to describe the management approaches to prevent ground water contamination and to respond to the occurrence(s) of such ground water contamination. Objectives of the program include the identification of agricultural sources of ground water contamination, description of management and implementation approaches; and the identification of roles and responsibilities of agencies involved in the protection of ground water quality.

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<sup>3</sup> The most recent TMDL schedule available at the time of this listing is the State of Idaho Eight (8) Year TMDL Schedule. At URL [http://www2.state.id.us/deq/water/tmdlschd\\_97.htm](http://www2.state.id.us/deq/water/tmdlschd_97.htm)

The Agricultural Ground Water Quality Protection Program for Idaho (1996) identified the following twelve potential agricultural contaminant sources:

- Agricultural chemical storage and handling
- Agricultural chemical mixing and loading
- Agricultural chemical application practices
- Agricultural practices
- Confined animal feeding operations
- Agricultural chemical waste disposal
- Aquaculture waste management practices
- Injection wells and other underground disposal methods
- Agricultural chemical spills
- Urban/nonagricultural chemical uses
- Land applied waste and wastewater
- Agricultural waste disposal
- Well construction and abandonment

These potential agricultural contaminant sources and their impacts on ground water are being addressed through education, voluntary BMPs, and regulation.

IDWR has been implementing the Statewide Ambient Ground Water Monitoring Program since 1990, with ISDA implementing regional, local, dairy, BMP effectiveness, and regulatory monitoring since 1992. Monitoring information, data, and planning efforts related to these programs and those of other agencies such as United States Geological Service, DEQ, and others are coordinated through the Ground Water Monitoring Technical Committee. DEQ manages a multiple agency monitoring technical committee to support programs, projects, and policies in implementing the DEQ Ground Water Rule (1997), the Agricultural Ground Water Quality Protection Program for Idaho (1996), and the Ag Plan.

These efforts have also assisted DEQ, cities, and other groups to implement the Safe Drinking Water Act (SDWA) Source Water Protection Program (2000). Source Water Protection Plans are being created for more than 2,000 public drinking water systems in Idaho. Implementation efforts will then follow the approval of each plan. Implementation of these plans by DEQ, ISDA, SCDs, Idaho Soil Conservation Commission (SCC), and others will be a significant effort linking to Ag Plan to the SDWA and other laws and rules.

In March of 2000, DEQ established a Policy for Addressing Degraded Ground Water Quality Areas (DEQ Policy No. PM00-4). The policy sets forth a process to 1) identify, designate, and delineate areas where ground water quality is significantly degraded as defined by rule; 2) prioritize the significantly degraded areas; 3) with the use of local input, develop ground water quality management strategies for improving ground water quality in high priority areas based on current categorization and applicable standards; 4) periodically review the effectiveness of the area-specific ground water quality management strategies; 5) pursue recategorization of high priority ground water areas when management strategies are ineffective and additional protection to improve or maintain water quality standards or preserve beneficial uses is necessary; and 6)

remove high priority designation when management strategies have proven to be protective of aquifer water quality and beneficial uses.

DEQ may initiate an evaluation at any time to determine whether ground water quality trends identify an area as being significantly degraded or having impaired beneficial uses. Areas will be screened for selection if they are deemed to have significant degradation as set forth in the Ground Water Quality Rule, IDAPA 16.01.11.400.02.b. Water quality data used to identify degraded areas should involve samples that are representative of the aquifer in question and/or representative of the impacted beneficial use.

Delineation of significantly degraded ground water quality areas requires a determination of the potential area of impact or the known location and aerial extent of the contaminant of interest. Each area will be defined by the boundaries of aquifers or portions of aquifers that contain the contaminant of interest, land use information, and/or other considerations deemed appropriate by DEQ. With input from other agencies and the public, DEQ will establish a state-wide priority list for managing significantly degraded ground water quality areas. This list will be used to prioritize the implementation of protective management strategies or corrective action measures throughout the state.

DEQ shall ensure the participation of and coordination with the public and relevant agencies and entities during the development of management strategies. Once an affected portion of an aquifer has been designated as a significantly degraded area, DEQ will work with local groups, other agencies, and the public to develop ground water quality management strategies for that area. The strategies will focus on prevention, protection, and remediation measures to maintain or improve water quality or prevent impairment of a beneficial use.

DEQ, in coordination with other agencies and stakeholders, will be responsible for reviewing and ensuring that the activities are consistent with the overall goals of the Ground Water Quality Plan, Ground Water Quality Rule, Agricultural Coordination Committee, and IDWR/ISDA/DEQ Memorandum of Understanding. Special emphasis will be placed on public education, implementation of effective BMPs and best practical methods, technical assistance, and other forms of mitigation.

Upon completion of the local ground water management strategy implementation, DEQ and other appropriate agencies will assess the data for the purpose of evaluating the effectiveness of the strategy. The high priority designation will be removed from areas when management strategies have proven to be protective of aquifer water quality and beneficial uses.

An example of evaluating strategy effectiveness is the DEQ Nitrate Priority Ranking Process which provides criteria to determine where state efforts should be focused to address nitrate contaminated ground water. The ranking process provides a basis for ranking areas in Idaho with identified ground water impacts from nitrates. Areas are ranked based on population, existing water quality, and water quality trends. The ranking process also takes into account impacts on beneficial uses other than water supply.

The DEQ Ground Water Program finalized the State Nitrate Priority Area ranking in 2001. A Ground Water Monitoring Technical Committee was formed to develop criteria and procedures to prioritize areas of concern in order of significance in terms of impact, as well as implement the DEQ policy memorandum, Policy for Addressing Degraded Ground Water Quality Areas (Policy No. PM00-4). The 2001 list of Group 1 Nitrate Priority Areas (Table C-1) is based on the criterion of at least 25% of the wells sampled within the area exceeding 5 milligrams/liter nitrate. The list is scheduled to be reevaluated in 2003.

**Table C-1.** Group 1 Nitrate Priority Areas (2001)<sup>4</sup>

Area (Rank)	Name
1	Weiser
2	Twin Falls
3	Burley/Marsh Creek
4	Lower Boise/Canyon County
5	Camas Prairie
6	Grand View
7	Fort Hall
8	Ashton, Drummond, Teton River
9	Rupert
10	Payette
11	Eagle/Star
12	Homedale/Marsing
13	Hammett
14	Bruneau
15	Lapwai Creek
16	St. Anthony
17	Pocatello
18	Soda Springs/Bear River
19	Mountain Home
20	Hibbard
21	Mud Lake
22	Preston/Cache Valley
23	Genesee/Cow Creek
24	Boise/Meridian
25	Bliss

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<sup>4</sup> Final ranking information and comments can be found at URL:  
[http://www2.state.id.us/deq/water/gw/nitrate/nitrate\\_ranking.htm](http://www2.state.id.us/deq/water/gw/nitrate/nitrate_ranking.htm)

# Idaho Agricultural Pollution Abatement Plan

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Section D:

AGRICULTURAL ACTIVITIES  
WHICH MAY IMPACT WATER QUALITY

## **AGRICULTURAL ACTIVITIES WHICH MAY IMPACT WATER QUALITY**

### **Background**

The federal Water Quality Act of 1987 (PL 100-4) emphasizes the state's role in implementing the nonpoint source provisions of the Act. Utilizing US Environmental Protection Agency (EPA) guidelines, state water quality agencies, are to assess nonpoint sources of water pollution in their states and describe a management plan to deal with identified pollutant sources.

For the purpose of this Idaho Agricultural Pollution Abatement Plan (Ag Plan), agriculture is defined as any activity where land is used for the production of crops and livestock. Agriculture is one of eight major nonpoint source pollution categories assessed in Idaho.<sup>1</sup> The Ag Plan addresses four primary sub-categories of production and land use activities under the agricultural category. These sub-categories include:

- Nonirrigated Cropland
- Irrigated Cropland
- Pastureland and Rangeland
- Animal Feeding Operations<sup>2</sup>

In order to address surface and ground water quality impacts, it is necessary to describe the agricultural activities and associated potential pollutants causing the water quality impacts, their location, and magnitude. This categorization scheme allows for the characterization of surface and ground water pollution degradation resulting from agricultural activities.

Impacts from hydrologic and habitat modification are addressed in the Ag Plan under the four sub-categories of production activities. Activities in this category include channelization, dredging, dam construction and bridge construction, removal of riparian vegetation and streambank modification or destabilization.

Impacts from silviculture (forest management and/or harvest activities) are not addressed in the Ag Plan. The Idaho Forest Practices Water Quality Management Plan has been developed to address silviculture. Rules and regulations concerning private and commercial forestry activities, such as harvesting, are contained in the Idaho Forest Practices Act.

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<sup>1</sup> The Idaho Nonpoint Source Management Plan (DEQ 1999) identifies agriculture, silviculture, hydrologic and habitat modification, mining, subsurface sewage disposal, industrial chemicals, urban stormwater runoff, and roadways as activities that potentially contribute to nonpoint source pollution.

<sup>2</sup> Animal feeding operations which are Concentrated Feeding Operations are point sources subject to the NPDES permit program (40 CFR 122.23).



## **Nonpoint Source Pollution Which May Impact Water Quality**

Nonpoint source pollution comes from many diffuse sources, unlike point source pollution originating from permitted industrial and sewage treatment plants and concentrated animal feeding operations. Nonpoint source pollution delivery is caused by rainfall, snowmelt, or irrigation water moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, and potentially deposits them into streams, lakes, reservoirs, wetlands, and aquifers. Designated beneficial uses and general water quality can be negatively affected by these pollutants. An excess of these pollutants can result in violations of state surface and ground water quality standards.<sup>3</sup> Some of these pollutants include:

- Sediment
- Nutrients
- Bacteria
- Metals
- Others (including grease and oil, pesticides, ammonia)

Excessive contributions of these pollutants can result in water quality criteria exceedances and violate state standards for water temperature, dissolved oxygen levels, turbidity, and pH values.

## **Cropland**

In 1997, an inventory tabulated more than 5.5 million cropland acres in Idaho (NRCS 2002). Those cropland acres used for annual crop production decreased between 1982 and 1997; this decrease is attributed to development and acres enrolled in the federal Conservation Reserve Program. Nearly 62% of Idaho's total cropland is irrigated (3.45 million acres), while 38% is nonirrigated (2.1 million acres) (NRCS 2002).

### Nonirrigated Cropland Activities Which May Impact Water Quality

About 56% of the nonirrigated cropland acreage occurs in the northern part of the state.<sup>4</sup> Approximately 25% occurs in the southeastern corner of the state.<sup>5</sup> The remaining 19% of the nonirrigated cropland is scattered throughout the southwestern corner, south-central section south of the Snake River, and southeast portion north of the Snake River<sup>6</sup> (NRCS 2002).

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<sup>3</sup> Idaho Administrative Code-Department of Environmental Quality, IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements, Section 080 – Violation of Water Quality Standards.  
Idaho Administrative Code-Department of Environmental Quality, IDAPA 58.01.11 – Ground Water Quality Rule.

<sup>4</sup> The northern part of the state includes Boundary, Bonner, Kootenai, Shoshone, Benewah, Clearwater, Latah, Nez Perce, Lewis, and Idaho counties.

<sup>5</sup> The southeast corner of the state includes Bannock, Bear Lake, Bingham, Caribou, Franklin, Oneida, and Power counties.

<sup>6</sup> The southwest corner of the state, involves acres within Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties. The south central portion of the state south of the Snake River, involves acres within Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties. The southeast portion of the state north of the Snake River, involves acres in Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, and Teton counties.

Runoff containing sediment and associated pollutants generally occurs when two conditions occur simultaneously. Winter and spring snow melt, and heavy rainfall periods when the soil profile is often nearly saturated or frozen, combined with cropland soil surfaces unprotected from erosion by the lack of crop residue and plant growth can result in excess erosion and sediment delivery off site. Erosion, and/or subsequent sediment delivery to receiving waters, can also be problematic during early summer rain events that possess enough intensity to erode newly spring seeded fields if soil surfaces are unprotected by the lack of crop residues and/or plant growth.

The acres of nonirrigated cropland throughout the state are diverse. For example, the nonirrigated cropland areas in the northern portion of the state, including the Palouse and Camas Prairies, occur on steep, highly erosive, and sometimes shallow soils. Nonirrigated cropland, where the average annual precipitation exceeds 20 inches and occurs predominately in winter and spring months, may leach nutrients and mobile pesticides below the crop root zone. This creates a potential for excess nutrients and agricultural chemicals to enter receiving streams and/or aquifers through subsurface water movement where plant uptake and soil holding capacity is exceeded.

Southeastern Idaho nonirrigated croplands and those along the Snake River Plain are generally on deep soils with calcic horizons and receive less annual precipitation than areas in the north. Moisture deficit areas have low potential to move agri-chemicals below the crop root zone to pollute ground water supplies or receiving waters through subsurface water movement. The potential for ground water quality impacts is less from nonirrigated cropland than from irrigated cropland, primarily because nonirrigated cropland does not receive as much water as does irrigated cropland. A reduction in the amount of water infiltrating through the soil profile reduces the ability of the water to leach agricultural chemicals to the ground water.

Removal of excessive amounts of crop residue can result in lower soil organic matter content, depleted soil infiltration rates and reduced moisture holding capacity. These conditions can lead to habitat alterations and hydrologic modifications in downstream receiving waters.

#### Irrigated Cropland Activities Which May Impact Water Quality

An estimated 94% of the total irrigated cropland lies within 30 miles of the Snake River in the southern part of the state. About 39% of irrigated cropland acreage occurs in the south-central portion of the state, south of the Snake River. Approximately 25% occurs in the southeast area of the state, north of the Snake River. The southeast corner of the state includes approximately 19% of the total irrigated cropland acres, while the southwest corner includes 15%. Very few acres of irrigated cropland occur in the northern counties, with only 2% of the overall irrigated cropland acres (NRCS 2002).

The sedimentation that results from irrigation induced erosion may contribute sediment, nutrients and pesticides to receiving surface waters. Any irrigation system can be a problem if improperly managed and excessive runoff occurs.

Ground water quality below the effective crop root zone can be impacted by deep percolation of improperly managed nutrient and pesticide applications. Agricultural chemical and nutrient

impacts on ground water depends on the physical properties and application of the chemical, the soil characteristics, crop needs, and irrigation water management. Soils and natural background levels of minerals and nutrients should be considered when evaluating potential impacts to ground water quality as it relates to irrigation practices.

Irrigation disposal (injection) wells are used in parts of Idaho to dispose of irrigation wastewater and other agricultural runoff water and are regulated by Idaho Department of Water Resources (IDWR). IDWR is currently revising injection well rules to conform to revised federal guidelines for deep injection wells (greater than 18 feet). Most of these injection wells are located in two regions of the state, the Eastern Snake River Plain, including Madison, Jefferson and Bonneville counties; and the Central Snake River Plain located in Minidoka, Gooding, Jerome and Twin Falls counties. A portion of these injection wells are either abandoned or in the process of being decommissioned. The potential for spilled hazardous materials to enter injection wells, either active or those that are improperly abandoned is also of concern. Irrigation water management and improved irrigation efficiencies could eliminate the problem of excess irrigation wastewater.

### **Pastureland and Rangeland**

Today, livestock grazing is the largest single land use in Idaho. Nearly half of the state's land area is grazed, totaling nearly 26 million acres. Idaho's grazing resource is composed of 7.2 million acres of private and state-owned rangeland, 1.3 million acres of privately owned pasturelands, and nearly 18 million acres of federally owned (primarily USDI Bureau of Land Management and US Forest Service) rangeland (IRRC 2002).

Beef and dairy cattle, sheep, hogs, and goats are the primary species involved in land used by animal agriculture throughout the state. Some hobby farms may also include horses, llamas, emus, poultry, and other nontraditional livestock. Two principal land uses are associated with domestic animal husbandry—grazing and feeding operations (including dairies and supplemental winter feeding operations), and the following narrative discusses grazing activities.

#### **Pastureland and Rangeland Activities Which May Impact Water Quality**

Throughout the state, late spring, summer, fall and winter grazing activities occur, with some yearlong grazing. The proximity of grazed areas to surface waters and aquifers, as well as the intensity at which pastures and rangeland are grazed, determines the impact to water quality from potential nonpoint source contributions. The principal pollutants of concern associated with grazing activities are bacteria, nutrients and sediment. Pollutants of concern from animal waste may be transported from range and pastureland and/or leach into subsurface waters. Overstocking of pastures and rangelands, inadequate growing-season rest, or prolonged season-long use can lead to plant community changes and an increase in bare soil which may cause these lands to be more susceptible to erosion and offsite sediment delivery as phosphorus often binds to soil organic and mineral particles. Overgrazing of riparian areas can impact riparian and wetland vegetation and may cause stream bank deterioration. Grazing animals with unrestricted access to streams can disturb the streambeds and contribute bacteria and nutrients.

Across the state, there is an increase in urbanization, which includes some hobby farm activity (the activity of raising nontraditional livestock). Although not viewed as a traditional agricultural operation, those activities also have a potential to contribute to nonpoint source pollution. The potential to impact water quality may be as great or greater from multiple small operations as from a single animal agriculture operation.

### **Animal Feeding Operations**

Animal feeding operations are categorized within the state based on the size of the operation, the number of animals in a given confined area, the duration of animal confinement, and the amount of surface vegetation present. These operations are referred to as either an animal feeding operation (AFO) or concentrated animal feeding operation (CAFO). CAFOs are subject to the National Pollution Discharge Elimination System (NPDES) general permit for point source discharges, authorized and enforced by EPA. AFOs designated by Idaho State Department of Agriculture (ISDA) as beef cattle animal feeding operations are regulated by ISDA under the Rules Governing Beef Cattle Animal Feeding Operations (IDAPA 02.04.15). Nutrient management plans following the Idaho Nutrient Management Standard (no. 590) for designated beef cattle AFOs are required. According to IDAPA 02.04.15, beef cattle AFOs that are operating on or before July 1, 2000 shall submit a nutrient management plan to the ISDA Director for approval by January 1, 2005. Beef cattle AFOs commencing operations after July 1, 2000 shall not operate prior to the Director's approval of a nutrient management plan.

The Idaho dairy industry has been regulated by ISDA since 1995. This occurs through the Idaho Dairy Pollution Prevention Initiative, which is a public/private partnership through Rules of the Department of Agriculture Governing Dairy Waste (IDAPA 02.04.14). To implement these rules, ISDA relies in part on the Ag Plan for the continued review and update of BMPs addressing animal feeding operations, such as the Idaho Nutrient Management Standard (no. 590). Nutrient management plans following this standard are required by all dairies in Idaho.

Swine and poultry facilities are permitted by Idaho Department of Environmental Quality through the Rules Regulating Swine and Poultry Facilities (IDAPA 58.01.09).

### **Animal Feeding Operations Which May Impact Water Quality**

Animal waste can be considered a nonpoint source of pollution. Riparian areas and wetlands located adjacent to, or within livestock production areas, including grazing lands and AFOs, may be impacted if livestock access is not restricted. Unrestricted access by animals from an AFO may result in the operation being regulated under the Rules of the Department of Agriculture Governing Beef Cattle Animal Feeding Operations (IDAPA 02.04.15.040.01, and 02.04.15.02.01).

Nutrients from animal wastes applied to agricultural land may reach ground water primarily if application rates exceed crop uptake, or if carried below the crop root zone by excessive application of irrigation water or high amounts of precipitation. A nutrient management plan considers this potential impact and is developed to prevent excess amounts of pollutants from entering the ground water (see IDAPA 02.04.15.030 and Dairy Rules).

The majority of Idaho's livestock are removed from summer pastures and moved closer to the operation's base facilities during the winter months. The land used during the winter months may not produce enough growing forage or crops while livestock are present, and the producer may have to provide supplemental feeds. This activity is often referred to as a winter supplemental feeding operation. Impacts to water quality may occur at these sites during spring snowmelt and can be further impacted if the livestock have a direct access to surface waters. Generally, those lands used as winter feeding operations may be used to produce forages or crops during the normal growing season. Winter feeding operations are considered nonpoint sources of water quality pollution.

# Idaho Agricultural Pollution Abatement Plan

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Section E:

WATER QUALITY LAW

## WATER QUALITY LAW

The Idaho Statutes include 73 titles. Individual titles include a set of chapters which are further divided into numerous sections. Within those sections, applicable to the implementation of this Idaho Agricultural Pollution Abatement Plan (Ag Plan), authorities, rules, regulations and standards necessary to address problems related to personal health and water pollution are defined. The elements within each section are defined within the Idaho Administrative Procedures Act (rules), referred to as IDAPA. To provide a background and overview of current Idaho water quality law, several citations within the Idaho Administrative Code address water quality and are referenced as follows:

- Violations of Water Quality Standards<sup>1</sup>

*“No pollutant shall be discharged from a single source or in combination with pollutants discharged from other sources in concentrations or in a manner that: will or can be expected to result in violation of the water quality standards applicable to the receiving water body or downstream waters; or will injure designated or existing beneficial uses.”*

- Surface Water Use Designations<sup>2</sup>

*“Waterbodies are designated in Idaho to protect water quality for existing or designated uses. ...Wherever attainable, the designated beneficial uses for which the surface waters of the state are to be protected include: aquatic life; recreation; water supply; wildlife habitats; and aesthetics.”*

- Administrative Policy<sup>3</sup>

*“Whenever attainable, surface waters of the state shall be protected for beneficial uses.”*

- Antidegradation Policy<sup>4</sup>

*“The existing in stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.”*

- Ground Water Quality Protection<sup>5</sup>

*“It is the policy of the State of Idaho to maintain and protect the existing high quality of the state’s ground water.”*

- Prevention of Ground Water Contamination<sup>6</sup>

*“The policy of the State of Idaho is to prevent contamination of ground water from all regulated and nonregulated sources of contamination to the maximum extent practical.”*

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<sup>1</sup> IDAPA 58.01.02.080-Violation of Water Quality Standards

<sup>2</sup> IDAPA 58.01.02.100-Surface Water Use Designation

<sup>3</sup> IDAPA 58.01.02.050.02-Administrative Policy, Protection of Waters of the State

<sup>4</sup> IDAPA 58.01.02.051.01-Antidegradation Policy, Maintenance of Existing Uses for All Waters

<sup>5</sup> IDAPA 58.01.11.006.01-Ground Water Quality Protection

<sup>6</sup> IDAPA 58.01.11.006.05-Prevention of Ground Water Contamination

## Surface Water

Water Quality Law, Idaho Code Sections 39-105<sup>7</sup> and 39-3601<sup>8</sup> *et seq.*, define authorities, rules, regulations and standards necessary to address problems related to personal health and water pollution. The Idaho legislature, in Idaho Code §39-3601, recognizing that surface water is one of the state's most valuable natural resources, has approved the adoption of water quality standards and granted legal authority to the Director of the Idaho Department of Environmental Quality (DEQ) to implement these standards in accordance with Idaho Code §39-104.

In order to maintain and achieve existing and designated beneficial uses and to conform to the expressed intent of Congress to control pollution of streams, lakes and other surface waters, the legislature declares that it is the purpose of the Idaho Code water quality chapter to enhance and preserve the quality and value of the surface water resources of the State of Idaho, and to define the responsibilities of public agencies in the control and monitoring of water pollution.

With the adoption of Water Quality Law, Idaho Code §39-3601 *et seq.* in 1995, Idaho entered a new era of local watershed planning and management. Water Quality Law §39-3601 sets forth a public process which created Basin Advisory Groups (BAGs) in each of the State's six hydrologic basins.<sup>9</sup> The BAGs represent members of agriculture, livestock, forest products, mining, water based recreation, non-municipal point source dischargers, local government, conservation groups, Indian tribes, and the general public.

In addition, the Water Quality Law authorized the development of Watershed Advisory Groups (WAGs) and recognized the existence of several ongoing WAGs throughout the state. The 27 WAGs recognized to date represent industries and interests effected by the management of their respective watershed.

Both BAGs and WAGs advise Idaho DEQ on water quality objectives for each basin and provide guidance on specific pollution control actions to restore designated beneficial uses of impaired water bodies. For waters on the state's §303(d) list, an action plan is formulated by DEQ, referred to as the Total Maximum Daily Load (TMDL). The TMDL quantifies the acceptable pollutant level for each point and nonpoint source necessary to achieve the applicable water quality standard within a specified amount of time.

Because the Ag Plan focuses on nonpoint source pollution prevention from agricultural activities, a reiteration of definitions is appropriate. Nonpoint source activities are defined as, "Activities on a geographical area on which pollutants are deposited or dissolved or suspended in water applied to or incident on that area, the resultant mixture being discharged into the waters of the state. Nonpoint sources activities include, but are not limited to: irrigated and nonirrigated lands used for grazing and/or crop production; silviculture including log storage or rafting; construction sites; recreation sites; septic tank disposal fields; mining; runoff from storms or

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<sup>7</sup> Idaho Code, Title 39 (Health and Safety), Chapter 1 (Environmental Quality-Health). 39-105: Powers and Duties of the Director.

<sup>8</sup> Idaho Code, Title 39 (Health and Safety), Chapter 36 (Water Quality). 39-3601: Declaration of Policy and Statement of Legislation.

<sup>9</sup> The six hydrologic basins in Idaho include the Panhandle, Clearwater, Salmon, Southwest, Upper Snake, and Bear River basins.



other weather related events; and other activities not subject to regulation under the federal national pollutant discharge elimination system.”<sup>10</sup>

Water Quality Law §39-3602 also established and defined roles of other state agencies by assigning designated agency responsibilities for those activities within the state that are the major contributors of nonpoint source loadings to waterbodies. These designations are: Idaho Department of Lands (IDL) for timber harvest activities, for oil and gas exploration and development and for mining activities; the Soil Conservation Commission (SCC) for grazing activities and for agricultural activities; the Idaho Transportation Department for public road construction; the Idaho State Department of Agriculture (ISDA) for aquaculture; and the Department of Environmental Quality for all other activities.

The designation of lead state agencies provides an ability to target projects and programs toward specific activities. Inclusive of the roles for these agencies are other state and federal programs with funding sources, recommended best management practices, regulatory and non-regulatory components, and indicators of program achievements, available at their disposal to help ensure meeting the state standards for water quality. These state designated roles are also significant in that the designated agencies automatically partner with those federal agencies having similar traditional roles, such as the agricultural partnership of the SCC and local Soil Conservation Districts (SCDs) with the federal USDA Natural Resources Conservation Service. Setting of similar goals, priorities, and program requirements has enhanced the ability of project implementation, stretched available funding, and ensured state/federal consistency in approaching the challenges posed by nonpoint source pollution and TMDL implementation.

Minimum stream flows may be appropriated by the Idaho Water Resource Board for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, transportation and navigation values, and water quality. These minimum stream flow water rights are subject to senior water rights.<sup>11</sup>

## **Ground Water**

Water Quality Law, Idaho Code Section 39-120 *et seq.*, designates DEQ as the primary agency, along with ISDA and Idaho Department of Water Resources (IDWR) as partner agencies, in coordinating and administering ground water quality protection programs for the state.

DEQ, IDWR, and ISDA are responsible for adopting applicable rules which specify the standards for determining actions necessary to prevent ground water contamination and cleanup actions necessary to meet the goals of the state. It is the policy of the state to maintain and protect the existing quality of the state’s ground water. The existing and projected future of beneficial uses of ground water shall be maintained and protected, and degradation that would impair existing and projected future beneficial uses of ground water and interconnected surface water shall not be allowed. Additionally, the policy of the state is to prevent contamination of

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<sup>10</sup> IDAPA 58.01.02.003.63-Definitions

<sup>11</sup> Idaho Statute, Title 42, Irrigation and Drainage-Water Rights and Reclamation, Chapter 15, Minimum Stream Flow (42-1501 *et seq.*)

ground water from all regulated and non-regulated sources of contamination to the maximum extent practical.<sup>12</sup>

No person shall cause or allow the release, spilling, leaking emissions, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that causes ground water quality standards to be exceeded; injures a beneficial use of ground water; or is not in accordance with a permit, consent order or applicable BMP, best available method or best practical method.<sup>13</sup>

When a numerical standard is not exceeded, but degradation of ground water quality is detected and deemed significant, DEQ can take several actions: 1) requiring a modification of regulated activities to prevent continued degradation; 2) coordinating with appropriate agencies and responsible persons to develop and implement prevention measures for activities not regulated by DEQ; or 3) allowing limited degradation of ground water quality for the identified constituents if BMPs, best available methods or best practical methods are applied and the degradation is justifiable based on necessary and widespread social and economic considerations. DEQ may also allow limited degradation up to the standards if BMPs are being applied and the degradation will not adversely impact a beneficial use.<sup>14</sup>

### **Enforcement Provisions**

Enforcement provisions for nonpoint source activities have been incorporated into several state statutes and rules, including the Water Quality Standards and Wastewater Treatment Requirements,<sup>15</sup> the Ground Water Quality Rule,<sup>16</sup> the Rules Governing Dairy Waste,<sup>17</sup> the Beef Cattle Environmental Control Act,<sup>18</sup> and the Rules Regulating Swine and Poultry.<sup>19</sup>

These rules governing nonpoint source activities recognize that nonpoint source pollution management, including BMP implementation and follow-up monitoring and evaluation, is a process for protecting designated beneficial uses and ambient water quality. This process is referred to as the feedback loop and is described in Section H of this Ag Plan. The Idaho Administrative Code cites that BMPs should be designed, implemented and maintained to provide full protection or maintenance of beneficial uses and cites this Ag Plan as the source for applicable BMPs.<sup>20</sup>

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<sup>12</sup> IDAPA 58.01.11.006-Policies

<sup>13</sup> IDAPA 58.01.11.400.01-Releases Degrading Ground Water Quality

<sup>14</sup> IDAPA 58.01.11.400.02-Prevention Measures

<sup>15</sup> IDAPA 58, Title 01, Chapter 2, the Water Quality Standards and Wastewater Treatment Requirements

<sup>16</sup> IDAPA 58, Title 01, Chapter 11, the Ground Water Quality Rule

<sup>17</sup> IDAPA 02.04.14 Rules of the Department of Agriculture Governing Dairy Waste

<sup>18</sup> IDAPA 02.04.15 Rules of the Department of Agriculture Governing Beef Cattle Animal Feeding Operations

<sup>19</sup> IDAPA 58.01.09 Rules Regulating Swine and Poultry Facilities

<sup>20</sup> IDAPA 58.01.02.054.07-Idaho Agricultural Pollution Abatement Plan

### Violation of Water Quality Standards<sup>21</sup>

Violations of water quality standards that occur in spite of implementation of BMPs will not be subject to enforcement action. However, if subsequent water quality monitoring and surveillance by the DEQ indicate beneficial uses are not met due to nonpoint source impacts even with the use of current BMPs, the practices will be evaluated and modified as necessary by the appropriate agencies in accordance with the provisions of the Administrative Procedure Act. In other words, the feedback loop will be implemented.

If necessary, injunctive or other judicial relief may be initiated against the landowner and/or operator of a nonpoint source activity in accordance with the DEQ Director's authorities provided in Section 39-108, Idaho Code. In certain cases, revision of the water quality standards may be appropriate. Failure to meet general or specific water quality criteria, or failure to fully protect a beneficial use, shall not be considered a violation of the water quality standards for the purpose of enforcement. Instead, water quality monitoring and evaluation of nonpoint source activities and BMPs will be used to evaluate the effectiveness of BMPs in protecting beneficial uses.

As long as a nonpoint source activity is being conducted in accordance with applicable rules, regulations and BMPs as referenced in Subsection 350.03 (Approved Best Management Practices), or in the absence of referenced applicable BMPs, conducted in a manner that demonstrates a knowledgeable and reasonable effort to minimize resulting adverse water quality impacts, the activity will not be subject to conditions or legal actions. In all cases, if imminent and substantial danger to the public health or environment is occurring, or may occur as a result of a nonpoint source by itself or in combination with other point or nonpoint source activities, then the Director may seek immediate injunctive relief to stop or prevent that danger, as provided in Section 39-108, Idaho Code.

For an activity occurring in a manner not in accordance with approved BMPs, or in a manner which does not demonstrate a knowledgeable and reasonable effort to minimize resulting adverse water quality impacts, the DEQ Director may, with appropriate inter-departmental coordination, prepare a compliance schedule; formally request that the responsible agency conduct a timely evaluation and modification of the practices to insure full protection of beneficial uses; and develop and recommend to the operator control measures necessary to fully protect the beneficial uses. Such control measures may be implemented on a voluntary basis, or where necessary, through appropriate administrative or civil proceedings.

Proper application of BMPs on one agricultural nonpoint source may not adequately meet a beneficial use need. Unless a particular agricultural nonpoint source is proven solely responsible for degradation of natural resources that directly affect beneficial use support, multiple nonpoint source pollution controls may be necessary.

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<sup>21</sup> IDAPA 58.01.02.080-Violation of Water Quality Standards

### Application to Agricultural Land Use - Private Lands

The state has adopted a voluntary implementation plan for agricultural nonpoint source water quality pollution consistent with the federal Clean Water Act and Idaho Code §39-3610. BMPs are applied on private agricultural lands through landowner initiative often facilitated through incentive programs such as the Water Quality Program for Agriculture, Environmental Quality Incentive Program and Section 319 Nonpoint Source Management Program, which are based on provision of technical assistance, information and education, and cost-share incentives.

SCDs are the local delivery system for the voluntary pollution abatement programs; SCC is the designated agency for grazing activities and agricultural activities; and DEQ is responsible for implementing and enforcing the water quality standards.

### Application to Agricultural Land Use – State Lands

The nonpoint source provisions of the water quality standards apply to state lands in the same manner as private lands. DEQ has entered into memorandums of understanding with IDL for silviculture and mining activities; SCC for agriculture and grazing; and ISDA for dairy waste management (DEQ 1999). The Idaho Department of Fish and Game (IDFG) is responsible for ensuring consistency in habitat and fish restoration activities statewide on state and private lands, as well as coordinating efforts with the agency's federal partners on federal lands. Enforcement of agricultural BMPs on lands managed by state agencies is implemented through the respective state agency's policies.

### Application to Agricultural Land Use – Federal Lands

The enforcement mechanism for nonpoint source pollution control is different on federal lands than it is on state and private lands due to the nature of the state-federal relationship as described in the federal Clean Water Act and implementing executive orders.

Section 313 of the Clean Water Act directs federal agencies to meet state requirements with respect to the control and abatement of pollution in the same manner and to the same extent as any nongovernmental entity. Under "Executive Order 12088" a federal agency is to promptly consult with the state upon notification of a violation of water quality standards, and develop a mitigation plan with an implementation schedule to come into compliance.

The Idaho Nonpoint Source Management Plan (DEQ 1999) describes the methods used by the state to achieve federal consistency in nonpoint source pollution reduction programs. Additionally, the State of Idaho has developed the 1999 Guidance for the Development of TMDLs, and its companion draft document, the 1999 Overview of the Implementation of nonpoint source TMDLs. These documents call for cooperation with, and the assistance of, federal agencies. The April 1999 Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Act 303(d) Listed Waters outlines the process of how these federal agencies can work with the state to support state TMDL requirements.

The Idaho Nonpoint Source Management Plan (1999) describes the process for achieving federal consistency. Federal consistency is obtained by federal agencies notifying DEQ regional offices of planned actions and sends environmental assessments, management plans, and environmental impact statements to solicit state input on a wide range of environmental effects including water quality. Once a contributing source of nonpoint source pollution is identified, the appropriate designated state agency works with the corresponding federal resource agency to develop the necessary adjustments to management plans to minimize pollution and protect and/or restore beneficial uses.

# Idaho Agricultural Pollution Abatement Plan

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Section F:

**BEST MANAGEMENT PRACTICES**

## **BEST MANAGEMENT PRACTICES (BMPs)**

As set forth in the Idaho Administrative Code,<sup>1</sup> the Agricultural Pollution Abatement Plan (Ag Plan) is the source for best management practices (BMPs) for the control of nonpoint sources of pollution from agriculture. In the context of this Ag Plan, BMP is defined as a practice or combination of practices determined to be the most effective, practicable means of reducing the amount of nonpoint source pollution generated by agricultural activities.<sup>2</sup>

For a BMP to accomplish the task of reducing nonpoint source pollution it must meet three criteria. BMPs must be: 1) technically feasible; 2) economically feasible; and 3) acceptable. By meeting all three of these criteria the BMP is defined as practicable.

- **Technical Feasibility** is based on research findings, field trials and years of practical field experience that demonstrate the BMP's effectiveness, alone or in combination with other component practices, in reducing the amount of nonpoint source pollution from agricultural activities.
- **Economic Feasibility** is based on economic evaluation and practical experience that demonstrate the BMP to be cost-effective in reducing the amount of pollution from agricultural nonpoint source activities.
- **Acceptable** practices are those component practices that the responsible party is willing to apply and maintain.

### **BMP Application**

A BMP is developed for application to a particular site to address a specific nonpoint source pollution concern based on site-specific data gathered and analyzed by a trained and experienced resource specialist. Site data may include soils, slope, climate, topography, crops grown, equipment used, water quality, water quantity, pests, and resource conditions. The land owner/operator's objectives, site data, and natural resource needs are used to select the BMP component practices that alone, or in combination, will meet the goals for that site. The conservationist or resource specialist may prescribe a number of alternative practices that not only meet the natural resource objectives, but also meet the landowner/operator's needs and capabilities. Because of the distinctive combination of site characteristics and natural resource objectives, the selected BMP and component practice applied is unique.

On public lands the process involves environmental evaluations, land use plans, and interdisciplinary teams of resource specialists. BMP implementation is generally accomplished through contract or direct involvement of the management agency, such as the US Forest Service (USFS) or the USDI Bureau of Land Management (BLM).

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<sup>1</sup> IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements. Section 054.07- Idaho Agricultural Pollution Abatement Plan.

<sup>2</sup> IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements. Section 002.05.02 – Antidegradation Plan for Agriculture.

There is currently a proposed Environmental Protection Agency policy on water quality trading that addresses innovative approaches to water quality protection. The policy supports trading of pollutants from point or nonpoint sources where such trading achieves a net water quality or environmental benefit and does not cause adverse localized impacts. The purpose of the policy is to encourage the adoption of trading programs that facilitate implementation of Total Maximum Daily Loads (TMDLs); reduce the cost of compliance with Clean Water Act regulations; establish incentives for voluntary reductions; and promote watershed-based initiatives that result in greater water quality and environmental benefits (EPA 2002). States and tribes will be authorized to trade nutrients, sediments, and other pollutants through legislation, rule making, incorporating provisions for trading into National Pollution Discharge Elimination System permits, establishing provisions for trading in TMDLs, or a combination of these.

### **BMP Selection**

During the development of the Ag Plan in 1979 and the revision in 1983, the “technical solutions” or practices selected to obtain water quality benefits were referred to as BMPs and were listed as such in the Ag Plan. These practices are now recognized and referred to as component practices that are used individually or in combination to develop BMPs (see Tables F-3 through F-7).

The USDA Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) is the source of BMP component practices accepted by the Idaho Soil Conservation Commission (SCC) and Idaho Department of Environmental Quality (DEQ) for inclusion in the Ag Plan Catalog of BMP Component Practices (Table F-2). The Catalog of Component Practices, housed and updated by SCC, contains those practices determined to be effective in the treatment of natural resource concerns. The FOTG is maintained in each local NRCS Field Office<sup>3</sup> and includes the standards and specifications for conservation practices designed and adapted to solve local land use concerns and natural resource problems. The Technical Standard for each component practice sets forth the minimum limits of technical excellence for its planning, design and construction. The following information is given in the Technical Standard:

- Definition - a description of the character or nature of the component practice.
- Purpose - a description of the use of and specific needs filled by the component practice in the overall effort to control natural resource impacts.
- Conditions Where Component Practice Applies - a statement of the specific conditions or pollution control needs that can be met by the component practice alone or in combination with others.
- Key Points in Component Practice Application - a list of special features, ideas and suggestions for practice application such as timeliness, soil conditions, and/or special equipment needs that significantly influence the success or failure of the practice. Key points are practice-specific and may not be included in the standard for all component practices.

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<sup>3</sup> URL site for Idaho NRCS: <http://www.id.nrcs.usda.gov/>



- Specifications Guide - a statement of where the technical requirements for the planning, designing, construction or application of the component practice can be found, i.e. NRCS FOTG. The referenced specifications set forth the required materials, operations and procedures to obtain the desired standards of construction and installation.

Component practices are modified or new ones developed when there is improvement in technology through research and demonstration; change in crops and cropping; change in economic conditions; change in social conditions; and/or change in water quality concerns, such as ground water emphasis. This is an ongoing process to keep up with technology and needs identified at the local level.

### **Evaluation of Applied BMPs**

In the early stages of BMP implementation, data is seldom adequate to accurately and precisely design the treatment needed to solve natural resource problems. In the absence of such data, the conservationist or resource specialist must draw from experience and the research findings from areas having similar characteristics to prescribe treatment alternatives. It must be understood by both the technical entity and the decision maker that BMP modifications or “fine-tuning” may be needed over time to fully attain established natural resource objectives. In some cases new component practices may need to be developed.

Technical evaluation of applied agricultural BMPs is a part of the feedback loop mechanism and is a two-phased process. The first phase, *implementation monitoring*, is carried out to ensure the adequacy of each of the component practices as designed and installed. The NRCS is the technical agency that provides assistance in the planning and implementation of BMPs on privately owned and state lands. NRCS conservation planning is guided by the NRCS National Planning Procedures Handbook. This is a three phase, nine step planning process that evaluates soil, water, air, plant and animal resources. Resource quality criteria in the FOTG for resource sustainability are used to identify resource problems and the BMPs that will solve those problems. The result is a conservation plan developed at the Resource Management System level. The three phase, nine step process is as follows.

#### **Phase I - Collection and Analysis (Understanding the Problems and Opportunities)**

1. Identify Problems and Opportunities
2. Determine Objectives
3. Inventory Resources
4. Analyze Resource Data

#### **Phase II - Decision Support (Understanding the Solutions)**

5. Formulate Alternatives
6. Evaluate Alternatives
7. Make Decisions

### Phase III - Application and Evaluation (Understanding the Results)

#### 8. Implement the Plan

#### 9. Evaluate the Plan

Implementation monitoring is accomplished through a formal quality check procedure in which a representative number of practices are evaluated annually by the NRCS. The USFS and BLM have been delegated the responsibility to assure implementation quality control on federal lands they administer.

The second phase in the evaluation of BMPs is *effectiveness monitoring*. This requires monitoring and evaluation of water quality following BMP application. If effectiveness monitoring indicates that natural resource objectives have been met, the applied BMP(s) are effective. If, on the other hand, the objectives are not met, the findings may be used to modify the BMP to attain the desired natural resource objectives. Part of this process should involve an assessment of the natural resource objectives and monitoring procedures. As implementation of the BMP occurs and more site-specific information is gathered, the compatibility of the natural resource objectives with the site potential should be reevaluated. Likewise, the monitoring procedures should be reevaluated to see if the proper water quality parameters are being evaluated by the appropriate techniques. All component practices need to be evaluated for effectiveness in providing water quality benefits for both surface and ground water. Pollution source identification may show that other non-agricultural nonpoint sources may hinder the effectiveness of applied agricultural BMPs on the quality of a water body. It is important to note that where multiple pollutant sources exist, complete treatment of agricultural lands alone may not meet watershed-scale natural resource objectives.

### **Component Practice Development and Modification Process**

The Catalog of Component Practices is developed and maintained through the following process.

1) The first step in modifying or developing new component practices is for the Soil Conservation Districts (SCDs) and the technical agencies to review current component practices and identify local needs that are not being addressed. The review will be conducted by the SCD Board of Supervisors and include area agency representatives and others as needed and appropriate. Factors considered in the review will include but are not limited to:

- Research findings;
- BMP evaluation and monitoring information from demonstration projects;
- All pertinent water quality monitoring information; and
- Experience and observations of individuals and groups as to the economic, social and practical application aspects of the practice, and its effectiveness in achieving the desired results.

2) If a need for modifications or development of new component practices is identified as a result of the review, the SCD will hold a meeting to provide an opportunity for public input on the proposals. This meeting may be held in connection with the monthly SCD Board of Supervisors meeting.

3) The proposed modifications or development of new component practices along with comments from the public input meeting will be forwarded to the SCC with recommendations.

4) The SCC will convene the BMP Technical Committee annually (or as needed) and present the proposals and recommendations forwarded through SCDs for evaluation. This committee will be chaired by the SCC. Membership shall consist of a technical representative from:

-Idaho Soil Conservation Commission	-Idaho Soil Conservation Districts
-Idaho Department of Environmental Quality	-Environmental Protection Agency
-Idaho State Department of Agriculture	-Farm Service Agency
-Idaho Department of Lands	-Bureau of Land Management
-Idaho Department of Water Resources	-Forest Service
-University of Idaho-Cooperative Extension System	-Natural Resources Conservation Service
-Agricultural Industry	-Others as needed and appropriate

Technical specialists from these or other entities with expertise needed to review specific component practices may be appointed as ad hoc members. Also, it is appropriate for the BMP Technical Committee to call upon industry and conservation group technical specialists to assist in evaluating the practicability of component practices.

5) The BMP Technical Committee will evaluate each recommendation forwarded through the SCD by comparing existing component practices to see if any of these meet the identified needs. If modifications or development of new component practices are needed, the Technical Committee will use research data, monitoring, project evaluations, experience and observations to modify existing or develop new component practices. Resulting component practices will be evaluated for technical feasibility, economic feasibility and social acceptability.

6) The BMP Technical Committee's recommendations on component practices will be forwarded to the SCC and DEQ. The SCC and DEQ will act upon modified or newly developed component practices, by either accepting them into the Ag Plan Catalog of Component Practices, rejecting them or returning them to the BMP Technical Committee for further action.

7) Upon acceptance of modified or newly developed component practices by the SCC and DEQ, they will be listed in the Ag Plan Catalog of Component Practices. Standards and specifications for these practices will be maintained and provided at the state level by NRCS.

8) The SCD or local technical agency may adopt modified or newly developed component practices that are listed in the Ag Plan Catalog of Component Practices. Each SCD or technical agency local unit will maintain a list of the adopted component practices along with the appropriate standards and specifications.

9) The SCC will convene the BMP Effectiveness Subcommittee as needed for the review and evaluation of the effectiveness of BMP component practices.

## **Developing BMPs from Component Practices**

Typical agricultural BMPs that are developed using the Catalog of Component Practices (Table F-2) are:

- Nonirrigated Cropland BMP
- Irrigated Cropland BMP
- Grazing Land BMP
- Animal Waste Management BMP
- Riparian/Wetland BMP

A BMP usually requires the use of several component practices to meet natural resource objectives. A combination of BMPs may be needed to meet natural resource objectives on a particular land management unit, for example it may require both an Animal Waste Management BMP and an Irrigated Cropland BMP to adequately treat an individual farm.

In the Catalog of Component Practices, the standards and specifications for each component practice are referenced by the NRCS FOTG number along with other pertinent rules, regulations and guidelines. Guidelines other than those specified or referenced in the NRCS FOTG can be used for application of a component practice if such guidelines have been approved as adequate to meet the desired water quality objectives by the agency responsible for ensuring the technical adequacy of the design and installation of that component practice.

Practices considered normal and proper components of a selected BMP are identified in the Catalog of Component Practices. Such designation is not intended to be limiting or comprehensive since each situation is unique and may require other component practices from the catalog for the BMP to be functional. The following are lists of component practices commonly selected to develop each of the five agricultural BMPs.

### Nonirrigated Cropland BMP

Other component practices that may be necessary for development of this BMP are in the Catalog of Component Practices at the end of this section.

Conservation Crop Rotation	Nutrient Management
Contour Farming	Pest Management
Cover Crop	Residue Management (Mulch Till, No-till, etc.)
Critical Area Planting	Sediment Basin
Deep Tillage	Surface Roughening
Diversion	Subsurface Drain
Filter Strip	Terrace
Grade Stabilization Structure	Underground Outlet
Grassed Waterway	Water and Sediment Control Basin
Lined Waterway or Outlet	

### Irrigated Cropland BMP

Other component practices that may be necessary for development of this BMP are in the Catalog of Component Practices at the end of this section.

Agrichemical Mixing Facility	Irrigation System, Surface and Subsurface
Anionic Polyacrylamide (PAM)	Irrigation System, Tailwater Recovery
Conservation Crop Rotation	Irrigation Water Conveyance
Constructed Wetland	Irrigation Water Management
Cover Crop	Land Smoothing
Critical Area Planting	Mulching
Deep Tillage	Nutrient Management
Filter Strip	Pest Management
Grade Stabilization Structure	Pumping Plant for Water Control
Irrigation Land Leveling	Residue Management (Mulch Till, No-till, etc.)
Irrigation Pit or Regulating Reservoir	Sediment Basin
Irrigation Field Ditch	Structure for Water Control
Irrigation System, Microirrigation	Well Decommissioning
Irrigation System, Sprinkler	Underground Outlet

### Grazing Land BMP

Other component practices that may be necessary for development of this BMP are in the Catalog of Component Practices at the end of this section.

Animal Trails and Walkways	Pipeline
Brush Management	Pond
Critical Area Planting	Prescribed Grazing
Fence	Range Planting
Forage Harvest Management	Riparian Forest Buffer
Grade Stabilization Structure	Spring Development
Grazing Land Mechanical Treatment	Upland Wildlife Habitat Management
Nutrient Management	Use Exclusion
Pasture and Hayland Planting	Watering Facility
Pest Management	

### Animal Waste Management BMP

Other component practices that may be necessary for development of this BMP are in the Catalog of Component Practices at the end of this section.

Access Road	Pipeline
Composting Facility	Pond Sealing and Lining
Closure of Waste Impoundments	Pumping Plant for Water Control
Constructed Wetland	Roof Runoff Structure
Critical Area Planting	Underground Outlet
Dike	Waste Management System
Diversion	Waste Storage Facility
Fence	Waste Treatment Lagoon
Grade Stabilization Structure	Waste Utilization
Heavy Use Area Protection	Watering Facility
Manure Transfer	Water Well
Nutrient Management	

### Riparian/Wetland BMP

Other component practices that may be necessary for development of this BMP are in the Catalog of Component Practices at the end of this section.

Animal Trails and Walkways	Prescribed Grazing
Channel Vegetation	Riparian Forest Buffer
Constructed Wetland	Spring Development
Critical Area Planting	Streambank and Shoreline Protection
Dam, Diversion	Stream Channel Stabilization
Ephemeral Watercourse Planting	Stream Habitat Improvement and Management.
Fence	Tree/Shrub Establishment
Filter Strip	Use Exclusion
Fish Passage	Water Well
Grade Stabilization Structure	Watering Facility
Heavy Use Area Protection	Wetland Wildlife Habitat Management
Pond	Wetland Restoration
Pipeline	

## **Water Quality Standards and Beneficial Uses**

This Ag Plan provides guidance to contribute toward full support of identified beneficial uses through enhancement and maintenance of the quality of surface and ground waters of Idaho, to the extent that they are impacted by agricultural nonpoint source pollutants. Water quality standards are set for each designated beneficial use within Idaho. Meeting those surface and ground water quality standards ensures support of designated beneficial uses.

Designated beneficial uses for surface waters within the state include:<sup>4</sup>

- Aquatic Life
- Recreation
- Water Supply
- Wildlife Habitats
- Aesthetics

Designated beneficial uses for ground water include:<sup>5</sup>

- Domestic Water Supply
- Industrial Water Supply
- Agricultural Water Supply
- Aquaculture Water Supply
- Mining

Tables F-3 through F-7 graphically displays selected agricultural BMP components and their ability to improve beneficial uses for each of the five BMPs. The water quality standards directly affected are shown for each component practice per BMP. Nearly all water quality standards are indirectly affected by component practices.

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<sup>4</sup> IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements. Section 100 – Surface Water Use Designation.

<sup>5</sup> IDAPA 58.01.11.200 Ground Water Quality

Water quality standards listed per beneficial use are displayed in the following table:

**Table F-1.** Water Quality Standards per Designated Beneficial Use

<b>Designated Beneficial Use – Surface Water</b>	<b>Water Quality Standards</b>
Aquatic Life	pH dissolved gas chlorine residual water temperature ammonia turbidity dissolved oxygen
Recreation	E.coli
Water Supply	hazardous materials toxic substances deleterious materials radioactive materials (radioactivity) floating, suspended or submerged matter excess nutrients oxygen demanding materials sediment turbidity
Wildlife Habitats	hazardous materials toxic substances deleterious materials radioactive materials (radioactivity) floating, suspended or submerged matter excess nutrients oxygen demanding materials sediment
Aesthetics	hazardous materials toxic substances deleterious materials radioactive materials (radioactivity) floating, suspended or submerged matter excess nutrients oxygen demanding materials sediment
<b>Designated Beneficial Use – Ground Water</b>	<b>Water Quality Standards</b>
Domestic Water Supply Industrial Water Supply Agricultural Water Supply Aquaculture Water Supply Mining	primary constituent standards (numerical) <sup>6</sup> secondary constituent standards (numerical) <sup>6</sup> narrative standards <sup>7</sup>

<sup>6</sup> IDAPA 58.01.11.200.01 Numerical Ground Water Quality Standards

<sup>7</sup> IDAPA 58.01.11.200.02 Ground Water Quality Rule-Narrative Ground Water Quality Standards



**Table F-2.** Idaho Agricultural Nonpoint Source Pollution Abatement Plan Catalog of Component Practices (02/21/03)

Component Practice	NRCS Practice Code
Access Road	560
Agrichemical Mixing Facility	702
Alley Cropping	311
Animal Trails and Walkways	575
Anionic Polyacrylamide (PAM) Erosion Control	450
Brush Management	314
Channel Vegetation	322
Cover Crop	340
Closure of Waste Impoundments	360
Composting Facility	317
Conservation Cover	327
Conservation Crop Rotation	328
Constructed Wetland	656
Contour Buffer Strips	332
Contour Farming	330
Contour Stripcropping	585
Cover and Green Manure Crop	340
Critical Area Planting	342
Dam, Diversion	348
Dam, Multiple-Purpose	349
Deep Tillage	324
Dike	356
Diversion	362
Ephemeral Watercourse Planting	308
Fence	382
Field Border	386
Filter Strip	393
Firebreak	394
Fish Passage	396
Forage Harvest Management	511
Grade Stabilization Structure	410
Grassed Waterway	412
Grazing Land Mechanical Treatment	548
Heavy Use Area Protection	561
Irrigation Canal or Lateral	320
Irrigation Field Ditch	388
Irrigation Land Leveling	464
Irrigation Pit or Regulating Reservoir	552
Irrigation Storage Reservoir	436
Irrigation System, Microirrigation	441
Irrigation System, Sprinkler	442
Irrigation System, Surface and Subsurface	443
Irrigation System, Tailwater Recovery	447
Irrigation Water Conveyance, Ditch or Canal Lining	428
Irrigation Water Conveyance, Pipeline	430
Irrigation Water Management	449
Land Smoothing	466
Lined Waterway or Outlet	468
Mulching	484
Manure Transfer	634
Nutrient Management	590
Pasture and Hayland Planting	512
Pest Management	595
Pipeline	516

**Table F-2.** Idaho Agricultural Nonpoint Source Pollution Abatement Plan Catalog of Component Practices (02/21/03) *Continued*

<b>Component Practice</b>	<b>NRCS Practice Code</b>
Pond	378
Pond Sealing and Lining	521
Prescribed Burning	338
Prescribed Grazing	528
Pumping Plant for Water Control	533
Range Planting	550
Residue Management, Direct Seed	777
Residue Management, No Till and Strip Till	329A
Residue Management, Mulch Till	329B
Residue Management, Ridge Till	329C
Residue Management, Seasonal	344
Riparian Forest Buffer	391A
Roof Runoff Structure	558
Sediment Basin	350
Spoil Spreading	572
Spring Development	574
Stream Habitat Improvement and Management	395
Streambank and Shoreline Protection	580
Stream Channel Stabilization	584
Stripcropping, Field	586
Structure for Water Control	587
Subsurface Drain	606
Surface Drainage, Field Ditch	607
Surface Drainage, Main or Lateral	608
Surface Roughening	609
Terrace	600
Tree/Shrub Establishment	612
Underground Outlet	620
Upland Wildlife Habitat Management	645
Use Exclusion	472
Waste Management System	312
Waste Storage Facility	313
Waste Treatment Lagoon	359
Waste Utilization	633
Watering Facility	614
Water Harvesting Catchment	636
Water and Sediment Control Basin	638
Water Well	642
Well Decommissioning	351
Wetland Restoration	657
Wetland Wildlife Habitat Management	644
Windbreak/Shelterbelt Establishment	380

**Table F-3.** Agricultural BMP Component Practices and Their Ability to Improve Beneficial Uses for the **Nonirrigated Cropland BMP**

Designated Beneficial Use Affected		Ground Water	Surface Water										
		Ground Water Supplies	Recreation	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life	Aquatic Life Water Supply Wildlife Habitats Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics
NRCS Practice Code	Water Quality Standards <u>Directly</u> Affected <sup>^</sup>	Primary, Secondary and Narrative	E.coli	Water temperature	Sediment and Turbidity	Excess nutrients	Ammonia	Dissolved oxygen	pH	Oxygen demanding materials	Floating, suspended, submerged matter	Hazardous materials	Toxic substances
328	Conservation Crop Rotation				✓	✓							
330	Contour Farming				✓	✓							
340	Cover Crop				✓	✓							
342	Critical Area Planting				✓	✓							
362	Diversion				✓	✓							
393	Filter Strip				✓	✓					✓		
410	Grade Stabilization Structure				✓	✓							
412	Grassed Waterway				✓	✓							
590	Nutrient Management	✓				✓							
595	Pest Management	✓										✓	✓
329	Residue Management (Mulch Till, No Till, etc.)				✓	✓							
350	Sediment Basin				✓	✓							
606	Subsurface Drain				✓	✓					✓		
609	Surface Roughening				✓	✓							
612	Terrace				✓	✓							
620	Underground Outlet				✓	✓							
638	Water and Sediment Control Basin				✓	✓							

<sup>^</sup> Water quality standards directly affected are shown for each component practice per BMP. Nearly all water quality standards are indirectly affected by component practices.

**Table F-4.** Agricultural BMP Component Practices and Their Ability to Improve Beneficial Uses for the **Irrigated Cropland** BMP

Designated Beneficial Use Affected		Ground Water	Surface Water										
		Ground Water Supplies	Water Supply	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics
NRCS Practice Code	Water Quality Standards <u>Directly</u> Affected^	Primary, Secondary and Narrative	E.coli	Water temperature	Sediment and Turbidity	Excess nutrients	Ammonia	Dissolved oxygen	pH	Oxygen demanding materials	Floating, suspended, submerged matter	Hazardous materials	Toxic substances
450	Anionic Polyacrylamide (PAM)				✓	✓							
328	Conservation Crop Rotation				✓	✓							
656	Constructed Wetland				✓	✓		✓					
340	Cover Crop				✓	✓							
342	Critical Area Planting				✓	✓							
324	Deep Tillage				✓	✓							
393	Filter Strip				✓	✓							
410	Grade Stabilization Structure				✓	✓							
464	Irrigation Land Leveling				✓	✓							
441	Irrigation System, Microirrigation	✓			✓	✓					✓		
442	Irrigation System, Sprinkler	✓			✓	✓					✓		
443	Irrigation System, Surface and Subsurface	✓			✓	✓							
447	Irrigation System, Tailwater Recovery	✓			✓	✓					✓		
428-30	Irrigation Water Conveyance	✓			✓	✓							
449	Irrigation Water Management	✓			✓	✓							
484	Mulching				✓	✓							
590	Nutrient Management	✓				✓							
595	Pest Management	✓										✓	✓
329	Residue Management (Mulch Till, No Till, etc.)				✓	✓							
350	Sediment Basin				✓	✓					✓		
620	Underground Outlet				✓	✓					✓		

^ Water quality standards directly affected are shown for each component practice per BMP. Nearly all water quality standards are indirectly affected by component practices.

**Table F-5.** Agricultural BMP Component Practices and Their Ability to Improve Beneficial Uses for the **Grazing Land BMP**

Designated Beneficial Use Affected		Ground Water	Surface Water										
		Ground Water Supplies	Recreation	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics
NRCS Practice Code	Water Quality Standards <u>Directly</u> Affected^	Primary, Secondary and Narrative	E. coli	Water temperature	Sediment and Turbidity	Excess nutrients	Ammonia	Dissolved oxygen	pH	Oxygen demanding materials	Floating, suspended, submerged matter	Hazardous materials	Toxic substances
575	Animal Trails and Walkways				✓	✓							
314	Brush Management				✓								
656	Constructed Wetland				✓	✓		✓					
342	Critical Area Planting			✓	✓	✓							
382	Fence		✓		✓	✓							
511	Forage Harvest Management				✓	✓							
410	Grade Stabilization Structure				✓	✓							
548	Grazing Land Mechanical Treatment				✓	✓							
590	Nutrient Management	✓				✓							
512	Pasture and Hayland Planting				✓	✓							
595	Pest Management	✓										✓	✓
378	Pond												
528	Prescribed Grazing			✓	✓	✓							
550	Range Planting				✓	✓							
391A	Riparian Forest Buffer		✓	✓	✓	✓							
574	Spring Development		✓										
645	Upland Wildlife Habitat Mgt.			✓	✓	✓							
472	Use Exclusion		✓	✓	✓	✓							
614	Watering Facility				✓	✓							

^ Water quality standards directly affected are shown for each component practice per BMP. Nearly all water quality standards are indirectly affected by component practices.

**Table F-6.** Agricultural BMP Component Practices and Their Ability to Improve Beneficial Uses for the **Animal Waste Management** BMP

Designated Beneficial Use Affected		Ground Water	Surface Water										
		Ground Water Supplies	Recreation	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics
NRCS Practice Code	Water Quality Standards <u>Directly</u> Affected^	Primary, Secondary and Narrative	E.coli	Water temperature	Sediment and Turbidity	Excess nutrients	Ammonia	Dissolved oxygen	pH	Oxygen demanding materials	Floating, suspended, submerged matter	Hazardous materials	Toxic substances
560	Access Road				✓								
360	Closure of Waste Impoundments		✓			✓							
317	Composting Facility	✓	✓			✓	✓						
656	Constructed Wetland				✓	✓		✓					
342	Critical Area Planting				✓	✓							
356	Dike		✓		✓	✓							
362	Diversion		✓		✓	✓							
382	Fence		✓	✓	✓	✓							
410	Grade Stabilization Structure				✓	✓							
561	Heavy Use Area Protection			✓	✓	✓							
590	Nutrient Management	✓				✓				✓	✓		
516	Pipeline												
521	Pond Sealing and Lining	✓	✓										
558	Roof Runoff Structure	✓	✓			✓					✓		
620	Underground Outlet				✓								
313	Waste Storage Facility	✓	✓			✓				✓	✓		
359	Waste Treatment Lagoon	✓	✓			✓	✓			✓	✓		
633	Waste Utilization	✓	✓			✓	✓			✓	✓	✓	✓
614	Watering Facility												
642	Water Well												

^ Water quality standards directly affected are shown for each component practice per BMP. Nearly all water quality standards are indirectly affected by component practices.

**Table F-7.** Agricultural BMP Component Practices and Their Ability to Improve Beneficial Uses for the **Riparian/Wetland BMP**

Designated Beneficial Use Affected		Ground Water	Surface Water										
		Ground Water Supplies	Recreation	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics	Aquatic Life Water Supply Wildlife Habitat Aesthetics
NRCS Practice Code	Water Quality Standards <u>Directly</u> Affected^	Primary, Secondary and Narrative	E.coli	Water temperature	Sediment and Turbidity	Excess nutrients	Ammonia	Dissolved oxygen	pH	Oxygen demanding materials	Floating, suspended, submerged matter	Hazardous materials	Toxic substances
575	Animal Trails and Walkways				✓	✓							
322	Channel Vegetation			✓	✓	✓		✓				✓	
656	Constructed Wetland				✓	✓		✓					
342	Critical Area Planting			✓	✓	✓							
348	Dam, Diversion												
308	Ephemeral Watercourse Planting				✓								
386	Fence		✓										
393	Filter Strip		✓	✓	✓	✓		✓				✓	
396	Fish Passage												
410	Grade Stabilization Structure			✓	✓			✓					
561	Heavy Use Area Protection			✓	✓	✓							
378	Pond												
528	Prescribed Grazing			✓	✓	✓		✓				✓	
391A	Riparian Forest Buffer		✓	✓	✓	✓		✓					
574	Spring Development		✓										
580	Streambank and Shoreline Protection			✓	✓	✓		✓					
584	Stream Channel Stabilization			✓	✓								
395	Stream Habitat Improvement & Mgt			✓	✓								
612	Tree/Shrub Establishment			✓	✓	✓							
474	Use Exclusion	✓	✓	✓	✓	✓		✓				✓	
614	Watering Facility		✓		✓	✓							
644	Wetland Wildlife Habitat Mgt.		✓	✓	✓	✓							
657	Wetland Restoration			✓	✓	✓							

^ Water quality standards **directly** affected are shown for each component practice per BMP. Nearly all water quality standards are indirectly affected by component practices.

# Idaho Agricultural Pollution Abatement Plan

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Section G:

**IMPLEMENTATION**



## IMPLEMENTATION

The Idaho Nonpoint Source (NPS) Management Plan (DEQ 1999) serves as the foundation for management of all nonpoint source related activities throughout the state. Because the scale of land management varies widely across Idaho, it is important to address nonpoint source pollution by contributors. Agricultural activities are identified as one of eight nonpoint source sectors of water pollution within the Idaho NPS Management Plan. Several long and short-term goals are identified in the Idaho NPS Management Plan in an effort to address nonpoint source pollution. Those goals included:

**Figure G-1.** Idaho Nonpoint Source Management Plan Long and Short-Term Goals<sup>1</sup>

<i>Long-Term Goal:</i>	Update the Ag Plan for consistency with the Idaho NPS Management Plan.
	<i>Short-Term Goal:</i> Review and revise the Ag Plan and Idaho OnePlan best management practices (BMP) component practices.
<i>Long-Term Goal:</i>	Develop and implement a strategy with public land management agencies for consistent implementation of agricultural nonpoint source programs.
	<i>Short-Term Goal:</i> Develop state incentive program(s) for installation of agricultural BMPs.
<i>Long-Term Goal:</i>	As agricultural TMDL/WRAS plans are developed, implement and maintain BMPs on all critical agricultural lands (using the Idaho OnePlan).
	<i>Short-Term Goals:</i> Integrate state and federal programs for BMP implementation. Identify agricultural nonpoint sources of pollution to section 303(d) listed waters and develop watershed plans for treating critical acres.
<i>Long-Term Goal:</i>	Maintain and enhance fish habitat within impacted streams on agricultural lands.
	<i>Short-Term Goal:</i> Through Lemhi Model and Clearwater Focus Watersheds, coordinate local interests, agencies, landowners, and Indian tribes to maintain and enhance fish habitat and improve water quality.
<i>Long-Term Goal:</i>	Enhance the feedback loop process through design and implementation of BMP effectiveness evaluations and agricultural water quality monitoring.
	<i>Short-Term Goal:</i> Establish and coordinate technical assistance from multiple sources to assist agricultural BMP installation and maintenance.

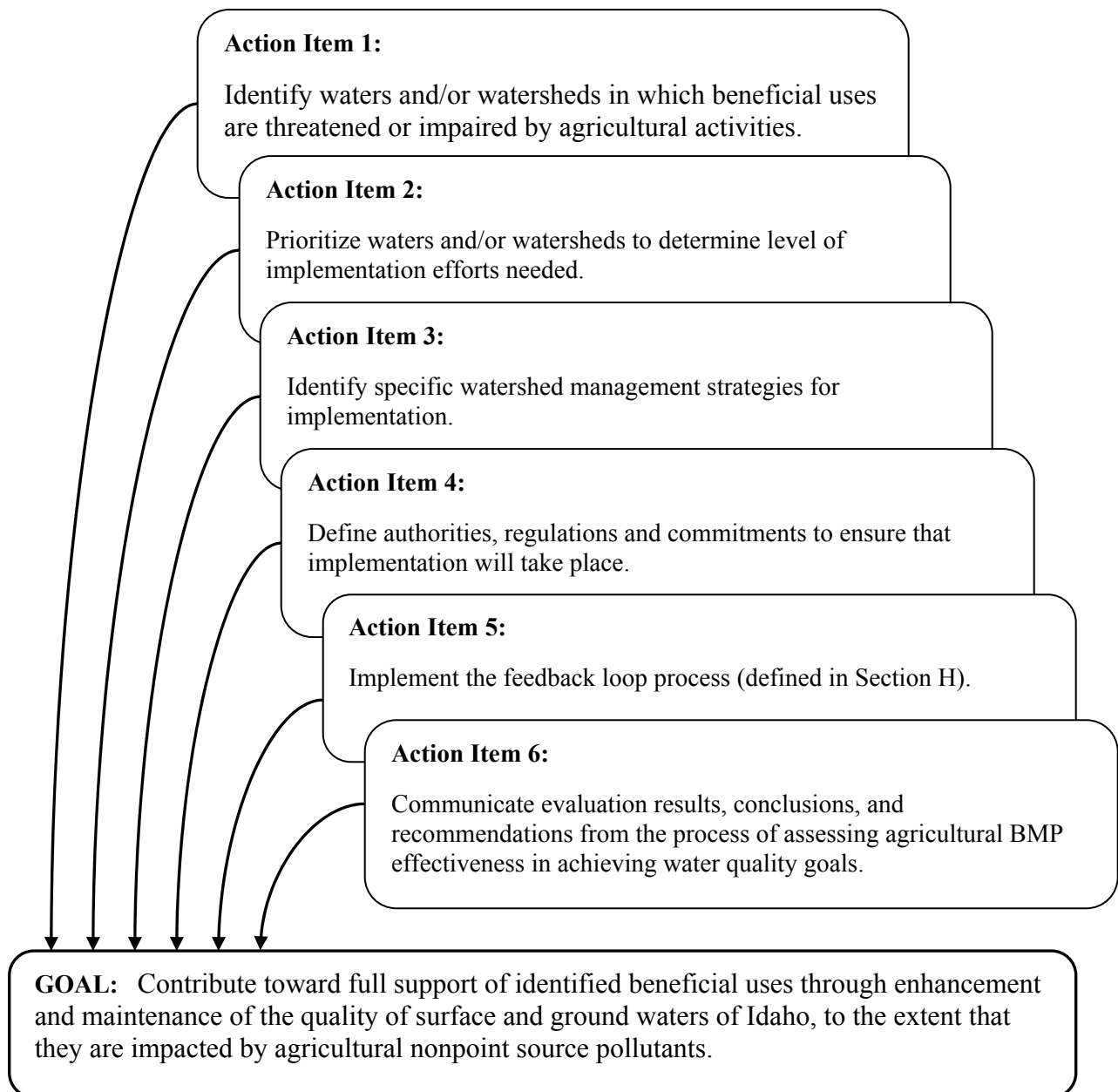
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<sup>1</sup> Idaho NPS Management Plan (DEQ 1999) Table 1.3, pages 18-19.

These long and short-term goals of the Idaho NPS Management Plan serve as the basis for which to achieve the goal of this Idaho Agricultural Pollution Abatement Plan (Ag Plan). In order to reach the Ag Plan's goal of enhancing and maintaining surface and ground waters of Idaho by reducing impacts from agricultural nonpoint source pollution, an implementation strategy for all identified agricultural nonpoint sources must be developed, executed, evaluated, maintained and improved as water quality laws and circumstances change.

The Ag Plan implementation strategy builds on the Idaho NPS Management Plan goals and includes several action items displayed in the following figure and discussed on the following pages.

**Figure G-2.** Idaho Agricultural Pollution Abatement Plan Implementation Strategy



**Action Item 1: Identify waters and/or watersheds threatened or impaired by agricultural activities.**

Land managers and natural resource specialists will continue to evaluate existing information from monitoring and watershed inventories, and collect information as needed. Waters and/or watersheds threatened or impaired by agricultural nonpoint source pollution are identified using these ongoing evaluations.

**Action Item 2: Prioritize waters and/or watersheds to determine the level of implementation efforts needed.**

Currently, priorities for implementing agricultural BMPs are established through the Idaho Total Maximum Daily Load (TMDL) schedule; ground water nitrate priority areas; Drinking Water Protection Plans; Agricultural Ground Water Protection Program for Idaho; Soil Conservation District (SCD) five year plans; impacted habitat areas related to aquatic species listed under the Endangered Species Act; and other local water quality and habitat protection priorities.

**Action Item 3: Identify specific watershed management strategies for implementation.**

Specific water quality or watershed management strategies are identified by initiating communication and planning at the local level with SCDs, Watershed Advisory Groups, and technical agencies, with overall guidance and support from the designated state or federal agencies. Landowners, operators and agency representatives should define and verify water quality priorities, identify appropriate BMPs and component practices needed for effective treatment, and proceed with protective or restorative land treatment through the implementation of BMPs. BMP implementation strategies should also define the implementation schedule and project anticipated time frames necessary to meet water quality goals.

**Action Item 4: Define authorities, regulations and commitments to ensure that implementation will take place.**

Authorities, regulations, permits, contracts, commitments, and other evidence sufficient to ensure that implementation will take place should be defined. Technical and financial resources at the local, state and federal levels will be coordinated.

The Idaho Soil Conservation Commission is the state agency organized to provide guidance and program implementation for private and state agricultural land use activities with respect to water quality. Numerous units of state and federal government also have authorities, roles and responsibilities that play a part in the control and management of nonpoint source pollution, originating from agricultural activities, of surface and ground waters of Idaho (see Section B). Implementation of the Ag Plan is accomplished through a variety of programs which provide:

- a) Technical assistance to identify problems, design solutions, and evaluate practice effectiveness;
- b) Information and education to raise awareness of agricultural pollution problems and solutions available; and
- c) Financial resources and tax incentives to assist with the cost of BMP installation. Planning water quality improvement projects requires integrating water quality objectives, resource needs, operator needs and capabilities among many ownerships and available programs.

The implementation of Idaho's Ag Plan will involve coordination and cooperation among appropriate agencies and entities to ensure its use on all federal, state, and private agricultural lands in the state. Programs currently available to assist landowners and operators with technical assistance and installing BMPs include:

- Water Quality Program for Agriculture (WQPA)
- Conservation Operations Program
- Resource Conservation and Development (RC&D)
- Emergency Watershed Protection Program (EWP)
- Small Watershed and Flood Prevention Program (PL-566)
- Cooperative River Basin Studies Program (CRBS)
- Rural Clean Water Program (RCWP)
- Food Security Act of 1985 (FSA)
- Food, Agricultural, Conservation and Trade Act of 1990 (FACTA)
- Section 319 Nonpoint Source Management Program Grants
- Resource Conservation and Rangeland Development Program (RCRDP), loans and grants
- Grazing Lands Conservation Initiative
- Natural Resource Conservation Credit
- Environmental Quality Incentives Program
- Soil & Water Conservation Assistance Program
- Fish and Wildlife Service Partners Program
- Columbia Basin Fish & Wildlife Program
- Conservation Reserve Program
- Conservation Reserve Program Continuous Sign-up
- Wetland Reserve Program
- Wildlife Habitat Incentives Program
- Habitat Improvement Program
- State Revolving Fund

#### **Action Item 5: Implement the feedback loop process.**

The feedback loop process should be implemented as an imperative step for program effectiveness appraisal. The feedback loop describes a process of nonpoint source pollution management based on the implementation and evaluation of BMPs (see Section F). Evaluating the results of the feedback loop process should direct BMP implementation adjustments and follow-up monitoring requirements.

**Action Item 6: Communicate evaluation results, conclusions, and recommendations from the process of assessing agricultural BMP effectiveness in achieving water quality goals.**

Through the feedback loop review, the effectiveness of the BMP, as well as the BMP's ability to assist in achieving water quality goals, is evaluated. Results of agricultural nonpoint source pollution abatement and its effect on water quality improvement should be communicated and made available for review so program adjustments and recommendations can continue to be implemented.

# Idaho Agricultural Pollution Abatement Plan

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Section H:

MONITORING AND EVALUATION

## **MONITORING AND EVALUATION**

### **Introduction**

An important part of the Idaho Agricultural Pollution Abatement Plan (Ag Plan) is the evaluation of applied best management practices (BMPs). Water pollution reductions and beneficial use improvements achieved through application of BMPs are detected through monitoring and evaluation. When water quality goals are not achieved, monitoring and evaluation are used to determine the need for new or modified BMPs.

Agricultural nonpoint source pollution control in Idaho has been carried out to a great extent through voluntary actions, state and federal incentive programs, and regulatory programs. Therefore, the review of monitoring and evaluation procedures within these programs is essential for determining overall effectiveness of BMPs in controlling agricultural nonpoint source pollution.

### **The Feedback Loop Process**

The Idaho Water Quality Standards and Wastewater Treatment Requirements<sup>1</sup> were revised in 1987 to address the feedback loop concept. The feedback loop concept is a mechanism for nonpoint source pollution management based on the implementation and evaluation of BMPs. An important component in evaluation strategies, which precedes the feedback loop process, is determining whether the designated beneficial uses are appropriate. Appropriateness of designated beneficial uses is evaluated on a case-specific basis in accordance with Idaho Department of Environmental Quality (DEQ) guidelines. The feedback loop occurs in four steps (presented graphically in Figure H-1):

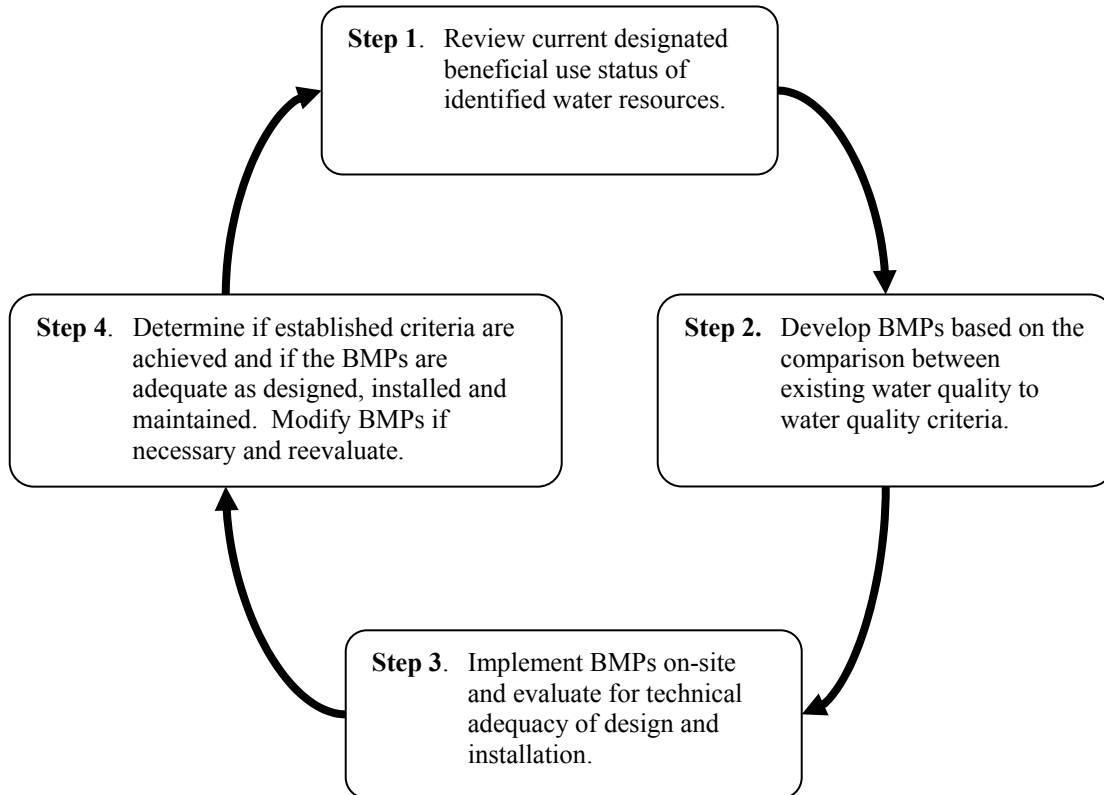
- Step 1. The process begins by reviewing current designated beneficial use status of identified water resources.
- Step 2. The existing water quality is compared to the water quality criterion established in Step 1. This comparison is the basis for developing or modifying BMPs.
- Step 3. The BMP is implemented on-site and evaluated for technical adequacy of design and installation.
- Step 4. The effectiveness of the BMP in achieving the criteria established in Step 1 is evaluated by comparison to water quality monitoring data. If the established criteria are achieved, the BMP is adequate as designed, installed and maintained. If not, the BMP is modified and the process of the feedback loop continues.

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<sup>1</sup> IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements. Modification of BMPs, Section 16.01.02350,02.c.iii.

The premise of the feedback loop is that nonpoint source pollution control, and ultimately water quality improvements and maintenance, are achieved through BMP installation, evaluation and modification. An integrated system of BMPs are approved by state process (see Section F, Best Management Practices), implemented on a site-specific basis, evaluated through monitoring and modified as needed to achieve water quality standards. Implementing the feedback loop to modify BMPs until water quality standards are met results in compliance with the standards.

**Figure H-1.** Feedback Loop Process



## **Monitoring Approach**

### Surface Water Monitoring

The beneficial uses of water in Idaho are defined as any of the various uses of water including, but not limited to, aquatic biota, recreation, water supply, wildlife habitat, and aesthetics. The four beneficial use categories include 1) aquatic life support, 2) contact recreation, 3) water supply and 4) other (including wildlife habitat, aesthetics and special resource waters).

Since 1993, the State's Beneficial Use Reconnaissance Program (BURP) has been used to determine the status of these beneficial uses and to establish existing uses. The purpose of BURP is to collect and measure key water quality variables that aid DEQ in determining the beneficial use support status of Idaho's water bodies. The determination will tell if a water body



is in compliance with water quality standards and criteria and if the water is meeting reference conditions. Reference conditions are those that fully support applicable beneficial uses with little affect from human activity and represent the highest level of support attainable, by major hydrologic regions or hydrologic unit codes.

Currently, DEQ recognizes three categories of beneficial use support status: fully supporting, not fully supporting, and not assessed. “Fully supporting” means that the water body is in compliance with water quality standards and criteria, and meeting the reference conditions for all designated and existing beneficial uses. “Not fully supporting” refers to a water body that is not in compliance with water quality standards or criteria, or not meeting reference conditions for each beneficial use. The “not assessed” category describes water bodies that have been monitored to some extent, but are missing critical information needed to complete an assessment. “Not assessed” can also mean that DEQ has not visited the water body and has no information on it.

BMP effectiveness evaluations are conducted by the Idaho Soil Conservation Commission (SCC) at the field level to determine adequacy of installation of selected BMPs, consistency of operation maintenance, and relative effectiveness in reducing water quality impacts. Supporting documentation of water quality effects of applied BMPs is provided through the Agricultural Total Maximum Daily Load (TMDL) Implementation Monitoring Program. This program is coordinated by Idaho State Department of Agriculture (ISDA), in conjunction with SCC and Idaho Association of Soil Conservation Districts, to supply water quality data for identification of agricultural pollution sources, support BMP effectiveness evaluations, and assist in implementing agricultural components of TMDLs.

### Ground Water Monitoring

Several state agencies currently perform ground water quality monitoring. Idaho Department of Water Resources conducts the statewide ambient ground water monitoring; ISDA conducts agricultural related regional, local, dairy, enforcement, and BMP effectiveness monitoring; and DEQ conducts regional and local monitoring. Other agencies such as US Geological Survey also conduct regional and local monitoring. These agencies work together to combine data for review and use by the DEQ lead Ground Water Monitoring Technical Committee. These efforts address objectives within a variety of programs including the Idaho Ground Water Plan (1991), Agricultural Ground Water Quality Protection Program for Idaho (1996), ISDA’s Federal Insecticide, Fungicide and Rodenticide Act cooperative agreement with US Environmental Protection Agency, Idaho’s Nonpoint Source Management Plan (1999), and the Ag Plan.

DEQ issued a policy memorandum on March 1, 2000 to address degraded ground water quality areas (Policy No: PM00-4). The purpose of this policy is to set forth a process to identify, designate, and delineate areas where ground water quality is significantly degraded as defined by rule; prioritize the significantly degraded areas; with the use of local input, develop ground water quality management strategies for improving ground water quality in high priority areas based on current categorization and applicable standards; periodically review the effectiveness of the area-specific ground water quality management strategies; pursue re-categorization of high priority ground water areas when management strategies are ineffective and additional protection to

improve or maintain water quality standards or preserve beneficial uses is necessary; and remove high priority designation when management strategies have proven to be protective of aquifer water quality and beneficial uses.

DEQ may initiate an evaluation at any time to determine whether ground water quality trends identify an area as being significantly degraded or having impaired beneficial uses. Areas will be screened for selection if they are deemed to have significant degradation as set forth in the Ground Water Quality Rule; IDAPA 16.01.11.400.02.b. Water quality data used to identify degraded areas involves samples that are representative of the aquifer in question and/or representative of the impacted beneficial use. The DEQ recognizes that improvements to ground water quality from the effective implementation of BMPs and best practical methods, or other corrective and preventive measures, could involve significant time frames.

The DEQ, the local ground water quality advisory committee, other agencies, and the public will periodically review the strategy implementation and progress toward preventing further contamination of degraded areas. If corrective and preventive measures are being pursued without adequate improvements to ground water quality or other indicators of success, then the DEQ will work with the appropriate entities to refine the existing strategy. If ground water quality objectives are not being met due to inadequate implementation of BMPs, best practical methods, or other corrective or preventive measures, then regulatory actions as authorized by law may be pursued. In instances where management strategies consistent with the current categorization are determined to be ineffective and additional protective measures are necessary to maintain or improve water quality or prevent impairment of a beneficial use, re-categorization of the aquifer or portions of the aquifer to Sensitive Resource Aquifer may be pursued.

#### Drinking Water Monitoring

The Safe Drinking Water Act Amendments require states to assess the water (called source water) from which public water systems draw to provide drinking water. Once completed, the source water assessments provide information on potential contaminant threats to public drinking water systems. The Idaho Source Water Assessment Plan<sup>2</sup> was developed in response to requirements set forth by the Safe Drinking Water Act Amendments passed by Congress in 1996. The Idaho DEQ, in conjunction with its public advisory committee, has developed the Idaho Source Water Assessment Plan to describe the major components of, and the procedures for, conducting source water assessments. The Idaho Source Water Assessment Plan provides a structure for planning and achieving consistent, rational assessments, while promoting public involvement.

#### BMP Effectiveness Monitoring

A comprehensive evaluation of BMP effectiveness requires the integration of three types of monitoring: on-site evaluation of practice design and adequacy; pollutant source and transport monitoring; and instream beneficial use assessment monitoring.

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<sup>2</sup> Idaho Source Water Assessment Plan. October 1999. State of Idaho DEQ-Ground Water Program.

On-site implementation evaluations are used to determine whether component practices are designed and installed according to project plans and in compliance with appropriate practice standards and whether they are being adequately maintained. The practice's relationship to other component practices is also evaluated in order to help determine if a complete resource management system has been achieved.

Pollutant source and transport monitoring assists in determining movement and delivery of nonpoint source pollution to receiving streams. This can be done by sample collection and analysis, modeling, or a combination of the two methods. Instream beneficial use assessment is discussed above in surface water monitoring.

The BMP effectiveness review process includes evaluation of installation adequacy of component practices, progress in application of the BMP (resource management systems), and protection of the quality of the water resource. The process involves the entities with appropriate technical capabilities (i.e. SCC, ISDA, DEQ) as well as the participating landowner. BMP effectiveness should be an integral component of every monitoring plan and follow these basic steps:

- Categorize appropriate local water quality concerns into measurable monitoring objectives;
- Select parameters that can be used to address each objective;
- Design an appropriate monitoring strategy, describe the rationale for that strategy and the intended and appropriate uses of the data;
- Describe the resources required to do the monitoring;
- Assign responsibilities for all facets of the monitoring, from sample collection through data assessment and evaluation, to writing the final report.

Due to the diversity of the monitoring objectives and the plan composition, monitoring intensity will vary between projects. Monitoring intensity can be categorized into the following three levels:

Level I - administrative level: This includes project administration and information gathering activities. Project reviews, financial audits, Level I riparian assessments and ground water vulnerability maps fall into this level.

Level II - field reconnaissance and inventory level: This includes qualitative assessment, expert judgment, and quantitative evaluation to the extent possible. Inventories conducted in the field and visual estimates are means by which information may be gathered. An example of BMP effectiveness monitoring at this level is the process established by SCC which utilizes on-site evaluation, measurement, and documentation (Appendix B). BMP implementation reviews and status reports are examples of qualitative monitoring activities.

Level III - intensive level: This is comprised of quantitative assessment techniques. Measurements of hydrology, streambank stability, fish population estimates, water chemistry analysis and vegetation community measurements are examples of quantitative monitoring techniques.

# Idaho Agricultural Pollution Abatement Plan

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Section I:

PLAN DEVELOPMENT

## PLAN DEVELOPMENT

The original Agricultural Pollution Abatement Plan (Ag Plan) was certified in 1979 by Governor John Evans. The Ag Plan was Idaho's response to Section 208 of the federal Clean Water Act (PL 92-500) and represented the agricultural portion of the State Water Quality Management Plan. The previous Ag Plan versions detailed how agricultural nonpoint source pollution was to be managed. The Plan was revised in 1983 and again in 1991 (published in 1993).

This version of the Ag Plan builds on the foundation laid specifically by the Idaho Nonpoint Source Management Plan (DEQ 1999) which set goals and provides guidance for the management of all nonpoint source related activities throughout the state. The Ag Plan is the implementing action plan for all nonpoint source agricultural sector activities in the state.

This version of the Ag Plan was developed with an US Environmental Protection Agency grant to the Idaho Soil Conservation Commission (SCC) through the Idaho Department of Environmental Quality. Working from 2001 through 2002, SCC hired a contractor to revise the plan and incorporate the most recent changes in state and federal water quality laws.

This latest revision of the Ag Plan was undertaken with the guidance of a Technical Advisory Committee (Table I-1) consisting of ten members representing state and federal agencies with water quality responsibilities.

**Table I-1.** Technical Advisory Committee

<b>Member</b>	<b>Agency or Entity Represented</b>
Kent Foster	Idaho Association of Soil Conservation Districts
Todd Maguire	Idaho Department of Environmental Quality
Phil Bandy	Idaho Department of Environmental Quality
Mike Thomas	Idaho Department of Environmental Quality
Biff Burleigh	Idaho Soil Conservation Commission
Tony Bennett	Idaho Soil Conservation Commission
David Ferguson	Idaho Soil Conservation Commission
Gary Bahr	Idaho State Department of Agriculture
Tom Coates	Idaho State Department of Agriculture
Lee Brooks	USDA-Natural Resources Conservation Service

An Agricultural Water Quality Advisory Committee (Table I-2) consisting of eight members representing conservation, industry and commodity groups reviewed and provided input to this revision.

After review and comments from the Agricultural Water Quality Advisory Committee, the plan was presented again to the Technical Advisory Committee for final review and edits. A joint meeting between the two committees was then held to review and edit a final draft.

The Ag Plan is intended to be a dynamic guidance document, with periodic updates provided as needed. Agricultural Nonpoint Source Water Quality Priorities (Section C) will need to be updated on a regular basis as new information is accumulated and problems are solved. Development, review and modification of BMP component practices, as an ongoing process through the Ag Plan, will provide a continual update of the Catalog of Component Practices.

**Table I-2.** Agricultural Water Quality Advisory Committee

<b>Member</b>	<b>Agency or Entity Represented</b>
Kent Foster	Idaho Association of Soil Conservation Districts
Lloyd Knight	Idaho Cattle Association
Lewis Eilers	Idaho Dairymen's Association
Dennis Tanikuni	Idaho Farm Bureau Federation
Steve Johnson	Idaho Grain Producers Association
Lynn Tominaga	Idaho Water Policy Group
Norm Semanko	Idaho Water Users Association, Inc.
Gayle Batt	Idaho Water Users Association, Inc.

Water quality laws, policies and programs are constantly changing to meet resource and society needs. The Ag Plan will be reviewed periodically (regular intervals anticipated) and amended as necessary to ensure consistency and compatibility with state water quality programs and plans, state and federal legislation and local needs. The SCC will be responsible for initiating and coordinating this review. When substantial revision is warranted the Agricultural Water Quality Advisory Committee and Technical Advisory Committee will be convened to provide guidance.

# Idaho Agricultural Pollution Abatement Plan

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Section J:

REFERENCES CITED

## **REFERENCES CITED**

- [DEQ] Water Quality Program, State of Idaho, Division of Environmental Quality. 1999. Idaho Nonpoint Source Management Plan. Contributing authors Gary Dailey, Charlie Bidondo, Todd Maguire.
- [EPA] United States Environmental Protection Agency. 2002. Referenced at web site location <http://www.epa.gov/owow/watershed/trading/proptradepolicy.html>
- [IRRC] Idaho Rangeland Resource Commission. 2002. Referenced at web site location <http://www.irrc.state.id.us/range/facts.htm>
- [NRCS] USDA Natural Resources Conservation Service, Idaho. 2002. National Resources Inventory, A summary of natural resource trends in Idaho between 1982 and 1997. Revised 12/2000 referenced at web site location [http://www.nrcs.usda.gov/technical/NRI/1997/summary\\_report/table3.html](http://www.nrcs.usda.gov/technical/NRI/1997/summary_report/table3.html)



# Idaho Agricultural Pollution Abatement Plan

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Appendix A:

ACRONYMS

## **ACRONYMS**

AFO	Animal Feeding Operation
BAG	Basin Advisory Group
BLM	United States Department of Interior – Bureau of Land Management
BMP	Best Management Practice
BOR	Bureau of Reclamation
BURP	Idaho Department of Environmental Quality Beneficial Use Reconnaissance Program
CAFO	Concentrated Animal Feeding Operation
CES	University of Idaho Cooperative Extension System
CWA	Clean Water Act
DEQ	Idaho Department of Environmental Quality
EPA	United States Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FOTG	USDA Natural Resources Conservation Service Field Office Technical Guide
FSA	Farm Services Agency
IASCD	Idaho Association of Soil Conservation Districts
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
IFPA	Idaho Forest Practices Act
ISDA	Idaho State Department of Agriculture
IWRB	Idaho Water Resource Board
NMFS	NOAA Fisheries National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System

OSC	Idaho Office of Species Conservation
SCC	Idaho Soil Conservation Commission
SCD	Soil Conservation District
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFS	United States Department of Agriculture Forest Service
WAG	Watershed Advisory Group

# Idaho Agricultural Pollution Abatement Plan

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Appendix B:

BMP EFFECTIVENESS FIELD SHEET

### BMP EFFECTIVENESS EVALUATION FIELD SHEET (updated March 2003)

<b>(1) SCD:</b>	PROJECT #	HUC#	TRACT/FIELD#/ACRES:	CONTRACT #	DATE:
OWNER/OPERATOR:			STREAM:	PROGRAM:	
REVIEWER(s):					
<b>(2) Type of Operation:</b> Non-irrigated Cropland <input type="checkbox"/> Animal Waste Management <input type="checkbox"/> Irrigated Cropland <input type="checkbox"/> Riparian/Wetland <input type="checkbox"/> Grazing <input type="checkbox"/>			<b>(6) Implementation:</b> Meets Plans and Specifications?                   Yes <input type="checkbox"/> No <input type="checkbox"/>		
<b>(14) Pollutants of Concern:</b> Sediment <input type="checkbox"/> Bacteria <input type="checkbox"/> Nutrients <input type="checkbox"/> Other <input type="checkbox"/>  <u>Estimated Reductions:</u> Sediment          _____           Bacteria          _____ Nutrients          _____           Other           _____			<b>(7) Supporting Documentation:</b>  <b>(8) Operation and Maintenance:</b> 5..... Maintenance exceeds standards and specifications 4..... Maintenance meets standards and specifications 3..... Minor departure from intent of contract/practice 2..... Major departure from intent of contracts/practices 1..... Gross neglect of contract/practices or practices removed		
<b>(15) Progress in Application of Resource Management System:</b> <i>(Measured by Percentage of Application Completed)</i> Excellent (75% - 100%) <input type="checkbox"/> Good (50% - 75%) <input type="checkbox"/> Fair (20% - 50%) <input type="checkbox"/> Poor (0% - 25%) <input type="checkbox"/>			<b>(9) Effectiveness:</b> 5..... Excellent protection of water quality resources 4..... Improved protection of water quality over pre-project conditions 3..... Practice is partially effective. Needs minor modification 2..... Practice is partially effective. Needs significant modification 1..... Practice is not effective. Needs to be replaced NR..... Not reviewed NA..... Not applicable  <i>For effectiveness scores less than 4: If impacts reach a stream channel mark the correct (effectiveness) column with an X.</i>		
<b>(3) Applied Practices to be Reviewed</b>	<b>(4) Structure</b>	<b>(5) Management</b>	<b>(10) O&amp;M (1 – 5)</b>	<b>(11) Effectiveness (1 – 5)</b> Surface                   Ground	<b>(12) Stream Channel</b>
<b>(16) Recommendations:</b>			<b>(13) Comments:</b>		

## **INSTRUCTIONS FOR THE BMP EFFECTIVENESS EVALUATION FIELD SHEET**

### **Section**

- (1) This section of the form is comprised of basic information pertaining to location, date, and identification of field review team.
- (2) Type of operation is indicated by placing a check mark within the brackets next to the appropriate activity designation. Space is available for notes.
- (3) Applied practices to be reviewed are selected from the contract and listed in this section.
- (4) & (5) Selected practices to be reviewed are identified as structural or management by placing a check under the appropriate heading.
- (6) & (7) These sections are used to validate proper implementation that meets plans and specification. Rationale for validation should be entered for each practice in section 10.
- (8) Operation and maintenance will be evaluated in the field and rated according to the criteria on the field sheet. The rating score will be entered for each practice in section 10.
- (9) Effectiveness of the installed practices will also be evaluated in the field using appropriate supporting data sheets, field measurements and modeling techniques. This information will be used for rationale for the effectiveness rating.
- (10) Operation and maintenance rating scores are entered in this column to correspond with the listed practices.
- (11) Effectiveness rating scores are to be entered in column A for surface water impacts or column B for groundwater impacts corresponding with the listed practices.
- (12) Place an X in the stream channel column corresponding to the listed practices that score less than a 4 on the rating criteria and where a direct impact to the stream occurs.
- (13) Provide any comments as needed.
- (14) Place a check under the identified pollutants and any estimates of reduction by the practice.
- (15) This item is used to evaluate progress toward achieving a complete Resource Management System on the field evaluated. Place a check in the appropriate bracket and provide any notes or comments to the side.
- (16) Recommendations are key to implementing and closing the feedback loop process at the field level.

# Idaho Agricultural Pollution Abatement Plan

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Comments and Notes:

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